

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: ERMA CAMERON Examiner #: 71098 Date: 4/15/03
 Art Unit: 1762 Phone Number 30 8-2330 Serial Number: 10/14 9900
 Mail Box and Bldg/Room Location: 10 D 29 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): see attached

Earliest Priority Filing Date: _____

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

a hydrophobic coating that also has the properties of being anti-corrosive, deicing, anti-fouling, and anti-microbial growth, and has a very high contact angle (i.e., is very hydrophobic) —

— the coating is a mixture of a gel and a powder (particulate material), in particular silica powder (claim 26).

— the gel is formed by reacting water, a solvent such as an alcohol, and a metal alkoxide such as TEOS, or other silane or titanium alkoxides (claims 5-9), but is in particular a silicon-based gel (claim 26).

STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>R. F. Miller</u>	NA Sequence (#) _____	STN <u>✓</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic <u>✓</u>	Dr. Link _____
Date Completed: <u>4/18/03</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>94</u>	Other _____	Other (specify) _____

EIC1700

Search Results

Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact*:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

Voluntary Results Feedback Form

➤ *I am an examiner in Workgroup:* *Example:*

➤ *Relevant prior art found, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

Other Comments:

Drop off completed forms in CP3/4 - 3D62 .

=> file hcaplus

FILE 'HCAPLUS' ENTERED AT 14:21:49 ON 18 APR 2003

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FILE COVERS 1907 - 18 Apr 2003 VOL 138 ISS 17

FILE LAST UPDATED: 17 Apr 2003 (20030417/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que 152

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      7631-86-9/BI OR 78-10-4/BI OR 9016-00-6/BI)
L2 (      2)SEA FILE=REGISTRY ABB=ON L1 AND PMS/CI
L3 (      3)SEA FILE=REGISTRY ABB=ON L1 NOT L2
L4 (      1)SEA FILE=REGISTRY ABB=ON L3 AND O2SI/MF
L5 (      2)SEA FILE=REGISTRY ABB=ON L3 NOT L4
L6 (      1)SEA FILE=REGISTRY ABB=ON TETRAMETHYLSILANE/CN
L7 (      1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAISOPROPOXIDE"/CN
L8 (      1)SEA FILE=REGISTRY ABB=ON TETRAETHYLSILANE/CN
L9 (      1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAETHOXIDE"/CN
L10 (     1)SEA FILE=REGISTRY ABB=ON "ZIRCONIUM BUTOXIDE"/CN
L11 (     5)SEA FILE=REGISTRY ABB=ON (L6 OR L7 OR L8 OR L9 OR L10)
L12 (     7)SEA FILE=REGISTRY ABB=ON L11 OR L5
L13 (    609211)SEA FILE=HCAPLUS ABB=ON L4 OR SIO2 OR SILICA OR SILICON
      DIOXIDE
L14 (    15176)SEA FILE=HCAPLUS ABB=ON L13 AND GEL# AND (POWDER? OR PARTICLE?
      OR PARTICULATE?)
L15 (    2503)SEA FILE=HCAPLUS ABB=ON HYDROPHOB?(5A)COATING#
L16 (    20349)SEA FILE=HCAPLUS ABB=ON GEL#(L)(AQ OR AQUEOUS? OR WATER OR
      H2O)(L)(ALC OR METHANOL OR MECH OR ETHANOL OR ETOH OR ISOPROANO
      L OR IPROH OR BUTANOL OR (METHYL OR ETHYL OR ISOPROPYL OR
      BUTYL)(W)ALCOHOL?)
L17 (    30354)SEA FILE=HCAPLUS ABB=ON L12 OR METAL ALKOXIDE#
L18 (    672)SEA FILE=HCAPLUS ABB=ON L16 AND L17
L19 (      0)SEA FILE=HCAPLUS ABB=ON L15 AND L18
L20 (   1041)SEA FILE=HCAPLUS ABB=ON L14 AND L17
L21 (    209)SEA FILE=HCAPLUS ABB=ON L20 AND COATING?
L22 (      3)SEA FILE=HCAPLUS ABB=ON L21 AND HYDROPHOB?
L23 (   12686)SEA FILE=HCAPLUS ABB=ON L2 OR PDMS
L24 (      6)SEA FILE=HCAPLUS ABB=ON L18 AND L23
L25 (   1909)SEA FILE=HCAPLUS ABB=ON L14 AND COATING?/SC, SX, AB, BI
L26 (     54)SEA FILE=HCAPLUS ABB=ON L25 AND HYDROPHOB?
L27 (      5)SEA FILE=HCAPLUS ABB=ON L26 AND MODIF?(3A)GEL#

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L28 (4)SEA FILE=HCAPLUS ABB=ON L26 AND ((FOUL? OR CORROS?) (3A) (INHIBI
 T? OR PREVENT?) OR ANTICORROS? OR DEICE OR DEICING OR DEICER#
 OR ANTIFOUL? OR ANTIMICROB? OR MICROBICID?)
 L29 (4806)SEA FILE=HCAPLUS ABB=ON L13 AND GEL#(6A) (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L30 (13)SEA FILE=HCAPLUS ABB=ON L15 AND L29
 L31 24 SEA FILE=HCAPLUS ABB=ON L19 OR L22 OR L24 OR L27 OR L28 OR
 L30
 L32 7 SEA FILE=HCAPLUS ABB=ON L31 AND COATING?/SC,SX
 L50 53 SEA FILE=HCAPLUS ABB=ON HYDROPHOB? AND COATING? AND (SIO2 OR
 SILICA OR SILICON DIOXIDE) AND GEL# AND (POWDER? OR PARTICLE#
 OR PARTICULATE?)
 L51 10 SEA FILE=HCAPLUS ABB=ON L50 AND COATING?/SC,SX
 L52 12 SEA FILE=HCAPLUS ABB=ON L51 OR L32

=> file wpix

FILE 'WPIX' ENTERED AT 14:22:03 ON 18 APR 2003
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FILE LAST UPDATED: 16 APR 2003 <20030416/UP>
 MOST RECENT DERWENT UPDATE: 200325 <200325/DW>
 DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> NEW WEEKLY SDI FREQUENCY AVAILABLE --> see NEWS <<<

>>> SLART (Simultaneous Left and Right Truncation) is now
 available in the /ABEX field. An additional search field
 /BIX is also provided which comprises both /BI and /ABEX <<<

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES,
 SEE <http://www.derwent.com/dwpi/updates/dwpicov/index.html> <<<

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http://www.stn-international.de/training_center/patents/stn_guide.pdf <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER
 GUIDES, PLEASE VISIT:
http://www.derwent.com/userguides/dwpi_guide.html <<<

=> d que 149

L1 (5)SEA FILE=REGISTRY ABB=ON (31900-57-9/BI OR 4253-34-3/BI OR
 7631-86-9/BI OR 78-10-4/BI OR 9016-00-6/BI)
 L2 (2)SEA FILE=REGISTRY ABB=ON L1 AND PMS/CI
 L3 (3)SEA FILE=REGISTRY ABB=ON L1 NOT L2
 L4 (1)SEA FILE=REGISTRY ABB=ON L3 AND O2SI/MF
 L5 (2)SEA FILE=REGISTRY ABB=ON L3 NOT L4
 L6 (1)SEA FILE=REGISTRY ABB=ON TETRAMETHYLSILANE/CN
 L7 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAISOPROPOXIDE"/CN
 L8 (1)SEA FILE=REGISTRY ABB=ON TETRAETHYLSILANE/CN
 L9 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAETHOXIDE"/CN
 L10 (1)SEA FILE=REGISTRY ABB=ON "ZIRCONIUM BUTOXIDE"/CN
 L11 (5)SEA FILE=REGISTRY ABB=ON (L6 OR L7 OR L8 OR L9 OR L10)
 L12 (7)SEA FILE=REGISTRY ABB=ON L11 OR L5
 L13 (609211)SEA FILE=HCAPLUS ABB=ON L4 OR SIO2 OR SILICA OR SILICON

DIOXIDE

L14 (15176) SEA FILE=HCAPLUS ABB=ON L13 AND GEL# AND (POWDER? OR PARTICLE?
OR PARTICULATE?)

L15 (2503) SEA FILE=HCAPLUS ABB=ON HYDROPHOB? (5A) COATING#

L16 (20349) SEA FILE=HCAPLUS ABB=ON GEL# (L) (AQ OR AQUEOUS? OR WATER OR
H2O) (L) (ALC OR METHANOL OR MECH OR ETHANOL OR ETOH OR ISOPROANO
L OR IPROH OR BUTANOL OR (METHYL OR ETHYL OR ISOPROPYL OR
BUTYL) (W) ALCOHOL?)

L17 (30354) SEA FILE=HCAPLUS ABB=ON L12 OR METAL ALKOXIDE#

L18 (672) SEA FILE=HCAPLUS ABB=ON L16 AND L17

L19 (0) SEA FILE=HCAPLUS ABB=ON L15 AND L18

L20 (1041) SEA FILE=HCAPLUS ABB=ON L14 AND L17

L21 (209) SEA FILE=HCAPLUS ABB=ON L20 AND COATING?

L22 (3) SEA FILE=HCAPLUS ABB=ON L21 AND HYDROPHOB?

L23 (12686) SEA FILE=HCAPLUS ABB=ON L2 OR PDMS

L24 (6) SEA FILE=HCAPLUS ABB=ON L18 AND L23

L25 (1909) SEA FILE=HCAPLUS ABB=ON L14 AND COATING? /SC, SX, AB, BI

L26 (54) SEA FILE=HCAPLUS ABB=ON L25 AND HYDROPHOB?

L27 (5) SEA FILE=HCAPLUS ABB=ON L26 AND MODIF? (3A) GEL#

L28 (4) SEA FILE=HCAPLUS ABB=ON L26 AND ((FOUL? OR CORROS?) (3A) (INHIBI
T? OR PREVENT?) OR ANTICORROS? OR DEICE OR DEICING OR DEICER#
OR ANTIFOUL? OR ANTIMICROB? OR MICROBICID?)

L29 (4806) SEA FILE=HCAPLUS ABB=ON L13 AND GEL# (6A) (POWDER? OR PARTICLE?
OR PARTICULATE?)

L30 (13) SEA FILE=HCAPLUS ABB=ON L15 AND L29

L33 (8) SEA FILE=WPIX ABB=ON L19 OR L22 OR L24 OR L27 OR L28 OR L30

L47 (31) SEA FILE=WPIX ABB=ON HYDROPHOB? AND COATING? AND (SIO2 OR
SILICA OR SILICON DIOXIDE) AND GEL# AND (POWDER? OR PARTICLE#
OR PARTICULATE?)

L48 (8) SEA FILE=WPIX ABB=ON L47 AND (C09D?/IC OR C09K?/IC)

L49 (13) SEA FILE=WPIX ABB=ON L48 OR L33

=> file japio

FILE 'JAPIO' ENTERED AT 14:22:15 ON 18 APR 2003

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FILE LAST UPDATED: 4 APR 2003 <20030404/UP>

FILE COVERS APR 1973 TO NOVEMBER 29, 2002

<<< GRAPHIC IMAGES AVAILABLE >>>

=> d que 146

L1 (5) SEA FILE=REGISTRY ABB=ON (31900-57-9/BI OR 4253-34-3/BI OR
7631-86-9/BI OR 78-10-4/BI OR 9016-00-6/BI)

L2 (2) SEA FILE=REGISTRY ABB=ON L1 AND PMS/CI

L3 (3) SEA FILE=REGISTRY ABB=ON L1 NOT L2

L4 (1) SEA FILE=REGISTRY ABB=ON L3 AND O2SI/MF

L5 (2) SEA FILE=REGISTRY ABB=ON L3 NOT L4

L6 (1) SEA FILE=REGISTRY ABB=ON TETRAMETHYLSILANE/CN

L7 (1) SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAISOPROPOXIDE"/CN

L8 (1) SEA FILE=REGISTRY ABB=ON TETRAETHYLSILANE/CN

L9 (1) SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAETHOXIDE"/CN

L10 (1) SEA FILE=REGISTRY ABB=ON "ZIRCONIUM BUTOXIDE"/CN

L11 (5) SEA FILE=REGISTRY ABB=ON (L6 OR L7 OR L8 OR L9 OR L10)

L12 (7) SEA FILE=REGISTRY ABB=ON L11 OR L5

L13 (609211) SEA FILE=HCAPLUS ABB=ON L4 OR SIO2 OR SILICA OR SILICON
DIOXIDE

L14 (15176)SEA FILE=HCAPLUS ABB=ON L13 AND GEL# AND (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L15 (2503)SEA FILE=HCAPLUS ABB=ON HYDROPHOB?(5A) COATING#
 L16 (20349)SEA FILE=HCAPLUS ABB=ON GEL#(L) (AQ OR AQUEOUS? OR WATER OR
 H2O) (L) (ALC OR METHANOL OR MEOH OR ETHANOL OR ETOH OR ISOPROANO
 L OR IPROH OR BUTANOL OR (METHYL OR ETHYL OR ISOPROPYL OR
 BUTYL) (W)ALCOHOL?)
 L17 (30354)SEA FILE=HCAPLUS ABB=ON L12 OR METAL ALKOXIDE#
 L18 (672)SEA FILE=HCAPLUS ABB=ON L16 AND L17
 L19 (0)SEA FILE=HCAPLUS ABB=ON L15 AND L18
 L20 (1041)SEA FILE=HCAPLUS ABB=ON L14 AND L17
 L21 (209)SEA FILE=HCAPLUS ABB=ON L20 AND COATING?
 L22 (3)SEA FILE=HCAPLUS ABB=ON L21 AND HYDROPHOB?
 L23 (12686)SEA FILE=HCAPLUS ABB=ON L2 OR PDMS
 L24 (6)SEA FILE=HCAPLUS ABB=ON L18 AND L23
 L25 (1909)SEA FILE=HCAPLUS ABB=ON L14 AND COATING?/SC, SX, AB, BI
 L26 (54)SEA FILE=HCAPLUS ABB=ON L25 AND HYDROPHOB?
 L27 (5)SEA FILE=HCAPLUS ABB=ON L26 AND MODIF?(3A) GEL#
 L28 (4)SEA FILE=HCAPLUS ABB=ON L26 AND ((FOUL? OR CORROS?) (3A) (INHIBI
 T? OR PREVENT?) OR ANTICORROS? OR DEICE OR DEICING OR DEICER#
 OR ANTIFOUL? OR ANTIMICROB? OR MICROBICID?)
 L29 (4806)SEA FILE=HCAPLUS ABB=ON L13 AND GEL#(6A) (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L30 (13)SEA FILE=HCAPLUS ABB=ON L15 AND L29
 L35 0 SEA FILE=JAPIO ABB=ON L19 OR L22 OR L24 OR L27 OR L28 OR L30
 L45 4 SEA FILE=JAPIO ABB=ON HYDROPHOB? AND COATING? AND (SIO2 OR
 SILICA OR SILICON DIOXIDE) AND GEL# AND (POWDER? OR PARTICLE#
 OR PARTICULATE?)
 L46 4 SEA FILE=JAPIO ABB=ON L45 OR L35

=> file rapra

FILE 'RAPRA' ENTERED AT 14:22:55 ON 18 APR 2003
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FILE LAST UPDATED: 2 APR 2003 <20030402/UP>
 FILE COVERS 1972 TO DATE

>>> The RAPRA Classification Code is available as a PDF file
 >>> and may be downloaded free-of-charge from:
 >>> http://www.stn-international.de/stndatabases/details/rapra_classcodes.pdf

=> d que 144

L1 (5)SEA FILE=REGISTRY ABB=ON (31900-57-9/BI OR 4253-34-3/BI OR
 7631-86-9/BI OR 78-10-4/BI OR 9016-00-6/BI)
 L2 (2)SEA FILE=REGISTRY ABB=ON L1 AND PMS/CI
 L3 (3)SEA FILE=REGISTRY ABB=ON L1 NOT L2
 L4 (1)SEA FILE=REGISTRY ABB=ON L3 AND O2SI/MF
 L5 (2)SEA FILE=REGISTRY ABB=ON L3 NOT L4
 L6 (1)SEA FILE=REGISTRY ABB=ON TETRAMETHYLSILANE/CN
 L7 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAISOPROPOXIDE"/CN
 L8 (1)SEA FILE=REGISTRY ABB=ON TETRAETHYLSILANE/CN
 L9 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAETHOXIDE"/CN
 L10 (1)SEA FILE=REGISTRY ABB=ON "ZIRCONIUM BUTOXIDE"/CN
 L11 (5)SEA FILE=REGISTRY ABB=ON (L6 OR L7 OR L8 OR L9 OR L10)
 L12 (7)SEA FILE=REGISTRY ABB=ON L11 OR L5
 L13 (609211)SEA FILE=HCAPLUS ABB=ON L4 OR SIO2 OR SILICA OR SILICON
 DIOXIDE

L14 (15176)SEA FILE=HCAPLUS ABB=ON L13 AND GEL# AND (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L15 (2503)SEA FILE=HCAPLUS ABB=ON HYDROPHOB?(5A)COATING#
 L16 (20349)SEA FILE=HCAPLUS ABB=ON GEL#(L)(AQ OR AQUEOUS? OR WATER OR
 H2O)(L)(ALC OR METHANOL OR ME OH OR ETHANOL OR ETOH OR ISOPROANO
 L OR IPROH OR BUTANOL OR (METHYL OR ETHYL OR ISOPROPYL OR
 BUTYL)(W)ALCOHOL?)
 L17 (30354)SEA FILE=HCAPLUS ABB=ON L12 OR METAL ALKOXIDE#
 L18 (672)SEA FILE=HCAPLUS ABB=ON L16 AND L17
 L19 (0)SEA FILE=HCAPLUS ABB=ON L15 AND L18
 L20 (1041)SEA FILE=HCAPLUS ABB=ON L14 AND L17
 L21 (209)SEA FILE=HCAPLUS ABB=ON L20 AND COATING?
 L22 (3)SEA FILE=HCAPLUS ABB=ON L21 AND HYDROPHOB?
 L23 (12686)SEA FILE=HCAPLUS ABB=ON L2 OR PDMS
 L24 (6)SEA FILE=HCAPLUS ABB=ON L18 AND L23
 L25 (1909)SEA FILE=HCAPLUS ABB=ON L14 AND COATING?/SC, SX, AB, BI
 L26 (54)SEA FILE=HCAPLUS ABB=ON L25 AND HYDROPHOB?
 L27 (5)SEA FILE=HCAPLUS ABB=ON L26 AND MODIF?(3A)GEL#
 L28 (4)SEA FILE=HCAPLUS ABB=ON L26 AND ((FOUL? OR CORROS?)(3A)(INHIBI
 T? OR PREVENT?) OR ANTICORROS? OR DEICE OR DEICING OR DEICER#
 OR ANTIFOUL? OR ANTIMICROB? OR MICROBICID?)
 L29 (4806)SEA FILE=HCAPLUS ABB=ON L13 AND GEL#(6A)(POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L30 (13)SEA FILE=HCAPLUS ABB=ON L15 AND L29
 L36 0 SEA FILE=RAPRA ABB=ON L19 OR L22 OR L24 OR L27 OR L28 OR L30
 L43 2 SEA FILE=RAPRA ABB=ON HYDROPHOB? AND COATING? AND (SIO2 OR
 SILICA OR SILICON DIOXIDE) AND GEL# AND (POWDER? OR PARTICLE#
 OR PARTICULATE?)
 L44 2 SEA FILE=RAPRA ABB=ON L43 OR L36

=> file compendex

FILE 'COMPENDEX' ENTERED AT 14:23:09 ON 18 APR 2003

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<<< SIMULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN
 THE BASIC INDEX >>>

<<< NEW DISPLAY FORMAT 'SCAN' AVAILABLE NOW >>>

=> d que 142

L1 (5)SEA FILE=REGISTRY ABB=ON (31900-57-9/BI OR 4253-34-3/BI OR
 7631-86-9/BI OR 78-10-4/BI OR 9016-00-6/BI)
 L2 (2)SEA FILE=REGISTRY ABB=ON L1 AND PMS/CI
 L3 (3)SEA FILE=REGISTRY ABB=ON L1 NOT L2
 L4 (1)SEA FILE=REGISTRY ABB=ON L3 AND O2SI/MF
 L5 (2)SEA FILE=REGISTRY ABB=ON L3 NOT L4
 L6 (1)SEA FILE=REGISTRY ABB=ON TETRAMETHYLSILANE/CN
 L7 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAISOPROPOXIDE"/CN
 L8 (1)SEA FILE=REGISTRY ABB=ON TETRAETHYLSILANE/CN
 L9 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAETHOXIDE"/CN
 L10 (1)SEA FILE=REGISTRY ABB=ON "ZIRCONIUM BUTOXIDE"/CN
 L11 (5)SEA FILE=REGISTRY ABB=ON (L6 OR L7 OR L8 OR L9 OR L10)

L12 (7)SEA FILE=REGISTRY ABB=ON L11 OR L5
 L13 (609211)SEA FILE=HCAPLUS ABB=ON L4 OR SIO2 OR SILICA OR SILICON
 DIOXIDE
 L14 (15176)SEA FILE=HCAPLUS ABB=ON L13 AND GEL# AND (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L15 (2503)SEA FILE=HCAPLUS ABB=ON HYDROPHOB? (5A)COATING#
 L16 (20349)SEA FILE=HCAPLUS ABB=ON GEL#(L) (AQ OR AQUEOUS? OR WATER OR
 H2O) (L) (ALC OR METHANOL OR MEOH OR ETHANOL OR ETOH OR ISOPROANO
 L OR IPROH OR BUTANOL OR (METHYL OR ETHYL OR ISOPROPYL OR
 BUTYL) (W)ALCOHOL?)
 L17 (30354)SEA FILE=HCAPLUS ABB=ON L12 OR METAL ALKOXIDE#
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 L19 (0)SEA FILE=HCAPLUS ABB=ON L15 AND L18
 L20 (1041)SEA FILE=HCAPLUS ABB=ON L14 AND L17
 L21 (209)SEA FILE=HCAPLUS ABB=ON L20 AND COATING?
 L22 (3)SEA FILE=HCAPLUS ABB=ON L21 AND HYDROPHOB?
 L23 (12686)SEA FILE=HCAPLUS ABB=ON L2 OR PDMS
 L24 (6)SEA FILE=HCAPLUS ABB=ON L18 AND L23
 L25 (1909)SEA FILE=HCAPLUS ABB=ON L14 AND COATING?/SC, SX, AB, BI
 L26 (54)SEA FILE=HCAPLUS ABB=ON L25 AND HYDROPHOB?
 L27 (5)SEA FILE=HCAPLUS ABB=ON L26 AND MODIF? (3A)GEL#
 L28 (4)SEA FILE=HCAPLUS ABB=ON L26 AND ((FOUL? OR CORROS?) (3A) (INHIBI
 T? OR PREVENT?) OR ANTICORROS? OR DEICE OR DEICING OR DEICER#
 OR ANTIFOUL? OR ANTIMICROB? OR MICROBICID?)
 L29 (4806)SEA FILE=HCAPLUS ABB=ON L13 AND GEL#(6A) (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L30 (13)SEA FILE=HCAPLUS ABB=ON L15 AND L29
 L37 1 SEA FILE=COMPENDEX ABB=ON L19 OR L22 OR L24 OR L27 OR L28 OR
 L30
 L41 3 SEA FILE=COMPENDEX ABB=ON HYDROPHOB? AND COATING? AND (SIO2
 OR SILICA OR SILICON DIOXIDE) AND GEL# AND (POWDER? OR
 PARTICLE# OR PARTICULATE?)
 L42 3 SEA FILE=COMPENDEX ABB=ON L41 OR L37

=> file ntis

FILE 'NTIS' ENTERED AT 14:23:20 ON 18 APR 2003

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FILE LAST UPDATED: 12 APR 2003

<20030412/UP>

FILE COVERS 1964 TO DATE.

<<<SIMOULTANEOUS LEFT AND RIGHT TRUNCATION AVAILABLE IN
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=> d que 140

L1 (5)SEA FILE=REGISTRY ABB=ON (31900-57-9/BI OR 4253-34-3/BI OR
 7631-86-9/BI OR 78-10-4/BI OR 9016-00-6/BI)
 L2 (2)SEA FILE=REGISTRY ABB=ON L1 AND PMS/CI
 L3 (3)SEA FILE=REGISTRY ABB=ON L1 NOT L2
 L4 (1)SEA FILE=REGISTRY ABB=ON L3 AND O2SI/MF
 L5 (2)SEA FILE=REGISTRY ABB=ON L3 NOT L4
 L6 (1)SEA FILE=REGISTRY ABB=ON TETRAMETHYLSILANE/CN
 L7 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAISOPROPOXIDE"/CN
 L8 (1)SEA FILE=REGISTRY ABB=ON TETRAETHYLSILANE/CN
 L9 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAETHOXIDE"/CN

L10 (1)SEA FILE=REGISTRY ABB=ON "ZIRCONIUM BUTOXIDE"/CN
 L11 (5)SEA FILE=REGISTRY ABB=ON (L6 OR L7 OR L8 OR L9 OR L10)
 L12 (7)SEA FILE=REGISTRY ABB=ON L11 OR L5
 L13 (609211)SEA FILE=HCAPLUS ABB=ON L4 OR SIO2 OR SILICA OR SILICON
 DIOXIDE
 L14 (15176)SEA FILE=HCAPLUS ABB=ON L13 AND GEL# AND (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L15 (2503)SEA FILE=HCAPLUS ABB=ON HYDROPHOB?(5A)COATING#
 L16 (20349)SEA FILE=HCAPLUS ABB=ON GEL#(L)(AQ OR AQUEOUS? OR WATER OR
 H2O)(L)(ALC OR METHANOL OR MEOH OR ETHANOL OR ETOH OR ISOPROANO
 L OR IPROH OR BUTANOL OR (METHYL OR ETHYL OR ISOPROPYL OR
 BUTYL)(W)ALCOHOL?)
 L17 (30354)SEA FILE=HCAPLUS ABB=ON L12 OR METAL ALKOXIDE#
 L18 (672)SEA FILE=HCAPLUS ABB=ON L16 AND L17
 L19 (0)SEA FILE=HCAPLUS ABB=ON L15 AND L18
 L20 (1041)SEA FILE=HCAPLUS ABB=ON L14 AND L17
 L21 (209)SEA FILE=HCAPLUS ABB=ON L20 AND COATING?
 L22 (3)SEA FILE=HCAPLUS ABB=ON L21 AND HYDROPHOB?
 L23 (12686)SEA FILE=HCAPLUS ABB=ON L2 OR PDMS
 L24 (6)SEA FILE=HCAPLUS ABB=ON L18 AND L23
 L25 (1909)SEA FILE=HCAPLUS ABB=ON L14 AND COATING?/SC,SX,AB,BI
 L26 (54)SEA FILE=HCAPLUS ABB=ON L25 AND HYDROPHOB?
 L27 (5)SEA FILE=HCAPLUS ABB=ON L26 AND MODIF?(3A)GEL#
 L28 (4)SEA FILE=HCAPLUS ABB=ON L26 AND ((FOUL? OR CORROS?)(3A)(INHIBI
 T? OR PREVENT?) OR ANTICORROS? OR DEICE OR DEICING OR DEICER#
 OR ANTIFOUL? OR ANTIMICROB? OR MICROBICID?)
 L29 (4806)SEA FILE=HCAPLUS ABB=ON L13 AND GEL#(6A)(POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L30 (13)SEA FILE=HCAPLUS ABB=ON L15 AND L29
 L38 0 SEA FILE=NTIS ABB=ON L19 OR L22 OR L24 OR L27 OR L28 OR L30
 L39 2 SEA FILE=NTIS ABB=ON HYDROPHOB? AND COATING? AND (SIO2 OR
 SILICA OR SILICON DIOXIDE) AND GEL# AND (POWDER? OR PARTICLE#
 OR PARTICULATE?)
 L40 2 SEA FILE=NTIS ABB=ON L38 OR L39

=> file jicst

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 7631-86-9/BI OR 78-10-4/BI OR 9016-00-6/BI)
 L2 (2)SEA FILE=REGISTRY ABB=ON L1 AND PMS/CI
 L3 (3)SEA FILE=REGISTRY ABB=ON L1 NOT L2
 L4 (1)SEA FILE=REGISTRY ABB=ON L3 AND O2SI/MF
 L5 (2)SEA FILE=REGISTRY ABB=ON L3 NOT L4
 L6 (1)SEA FILE=REGISTRY ABB=ON TETRAMETHYLSILANE/CN
 L7 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAISOPROPOXIDE"/CN
 L8 (1)SEA FILE=REGISTRY ABB=ON TETRAETHYLSILANE/CN
 L9 (1)SEA FILE=REGISTRY ABB=ON "TITANIUM TETRAETHOXIDE"/CN
 L10 (1)SEA FILE=REGISTRY ABB=ON "ZIRCONIUM BUTOXIDE"/CN
 L11 (5)SEA FILE=REGISTRY ABB=ON (L6 OR L7 OR L8 OR L9 OR L10)

L12 (7)SEA FILE=REGISTRY ABB=ON L11 OR L5
 L13 (609211)SEA FILE=HCAPLUS ABB=ON L4 OR SIO2 OR SILICA OR SILICON
 DIOXIDE
 L14 (15176)SEA FILE=HCAPLUS ABB=ON L13 AND GEL# AND (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L15 (2503)SEA FILE=HCAPLUS ABB=ON HYDROPHOB?(5A)COATING#
 L16 (20349)SEA FILE=HCAPLUS ABB=ON GEL#(L) (AQ OR AQUEOUS? OR WATER OR
 H2O) (L) (ALC OR METHANOL OR MECH OR ETHANOL OR ETOH OR ISOPROANO
 L OR IPROH OR BUTANOL OR (METHYL OR ETHYL OR ISOPROPYL OR
 BUTYL) (W)ALCOHOL?)
 L17 (30354)SEA FILE=HCAPLUS ABB=ON L12 OR METAL ALKOXIDE#
 L18 (672)SEA FILE=HCAPLUS ABB=ON L16 AND L17
 L19 (0)SEA FILE=HCAPLUS ABB=ON L15 AND L18
 L20 (1041)SEA FILE=HCAPLUS ABB=ON L14 AND L17
 L21 (209)SEA FILE=HCAPLUS ABB=ON L20 AND COATING?
 L22 (3)SEA FILE=HCAPLUS ABB=ON L21 AND HYDROPHOB?
 L23 (12686)SEA FILE=HCAPLUS ABB=ON L2 OR PDMS
 L24 (6)SEA FILE=HCAPLUS ABB=ON L18 AND L23
 L25 (1909)SEA FILE=HCAPLUS ABB=ON L14 AND COATING?/SC, SX, AB, BI
 L26 (54)SEA FILE=HCAPLUS ABB=ON L25 AND HYDROPHOB?
 L27 (5)SEA FILE=HCAPLUS ABB=ON L26 AND MODIF?(3A)GEL#
 L28 (4)SEA FILE=HCAPLUS ABB=ON L26 AND ((FOUL? OR CORROS?) (3A) (INHIBI
 T? OR PREVENT?) OR ANTICORROS? OR DEICE OR DEICING OR DEICER#
 OR ANTIFOUL? OR ANTIMICROB? OR MICROBICID?)
 L29 (4806)SEA FILE=HCAPLUS ABB=ON L13 AND GEL#(6A) (POWDER? OR PARTICLE?
 OR PARTICULATE?)
 L30 (13)SEA FILE=HCAPLUS ABB=ON L15 AND L29
 L38 0 SEA FILE=NTIS ABB=ON L19 OR L22 OR L24 OR L27 OR L28 OR L30
 L39 2 SEA FILE=NTIS ABB=ON HYDROPHOB? AND COATING? AND (SIO2 OR
 SILICA OR SILICON DIOXIDE) AND GEL# AND (POWDER? OR PARTICLE#
 OR PARTICULATE?)
 L53 2 SEA FILE=JICST-EPLUS ABB=ON L38 OR L39

=> dup rem 152 149 146 144 142 140 153

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 PROCESSING COMPLETED FOR L49
 PROCESSING COMPLETED FOR L46
 PROCESSING COMPLETED FOR L44
 PROCESSING COMPLETED FOR L42
 PROCESSING COMPLETED FOR L40
 PROCESSING COMPLETED FOR L53
 L54 37 DUP REM L52 L49 L46 L44 L42 L40 L53 (1 DUPLICATE REMOVED)

=> d 154 all 1-37

L54 ANSWER 1 OF 37 COMPENDEX COPYRIGHT 2003 EEI
 AN 2003(8):4836 COMPENDEX
 TI Wettability of microstructured **hydrophobic sol-gel coatings**.
 AU Pilotek, S. (Institut fur Neue Materialien, Saarbrucken, Germany); Schmidt, H.K.
 SO Journal of Sol-Gel Science and Technology v 26 n 1-3 January/March 2003
 2003.p 789-792
 CODEN: JSGTEC ISSN: 0928-0707
 PY 2003
 DT Journal
 TC Theoretical; Experimental
 LA English
 AB The formation of appropriate surface patterns on **hydrophobic** surfaces leads to a general change in their wettability and the contact angle increases substantially. Such **coatings** are of great technical interest, especially if aqueous media are concerned as in the prevention of ice-adhesion. For this reason various fluorine containing nanocomposite **coatings** have been developed by sol-gel processing. The morphology of these **hydrophobic** surfaces has been controlled by varying the content of **silica particles** regarding size, degree of aggregation, and concentration. The wettability is characterized by the measurement of dynamic contact angles against water. The complete range of different wettability regimes is accessible, i.e. smooth surfaces (both low advancing contact angle and hysteresis between advancing and receding contact angle), surfaces within the Wenzel regime (high advancing contact angle and hysteresis), and superhydrophobic surfaces (high advancing contact angle and low hysteresis). The wettability is correlated with the surface roughness as determined using a profilometer or AFM. The wettability of superhydrophobic surfaces is greatly dependent on the surface tension of the liquid. By comparison of the tiltangle θ_t of a smooth and a superhydrophobic surface, a critical surface tension γ_{mac} is identified, where $\theta_{t,smooth} = \theta_{t,micro}$ (microstructured surface). The microstructured surface provides a better run-off of liquids $\gamma_{alg} > \gamma_{mac}$ approx. = 55 mN * m⁻¹. 8 Refs.
 CC 804.1 Organic Components; 813.2 Coating Materials; 931.2 Physical Properties of Gases, Liquids and Solids; 802.3 Chemical Operations; 933.1 Crystalline Solids; 943.3 Special Purpose Instruments
 CT *Organic **coatings**; Morphology; Profilometry; Contact angle; Interfaces (materials); Surface tension; Surface roughness; Sol-gels; **Hydrophobicity**; Wetting; Microstructure; Nanostructured materials
 ST Nanomer **coatings**

L54 ANSWER 2 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 2002-339027 [37] WPIX

DNC C2002-097296

TI New transparent textured substrates with an outer web surface having protuberances, useful in glazing for transport vehicles, buildings or indoor or outdoor decorative elements.

DC A97 E11 J04 L01 Q12 Q44 Q48

IN GANDON, C; MARZOLIN, C; ROGIER, B; ROYER, E

PA (COMP) SAINT-GOBAIN GLASS FRANCE; (COMP) SAINT-GOBAIN GLASS FRANCE SA

CYC 96

PI WO 2002002472 A1 20020110 (200237)* FR 29p C03C015-00

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ

NL OA PT SD SE SL SZ TR TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK

DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR

KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU

SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2001072621 A 20020114 (200237) C03C015-00

FR 2811316 A1 20020111 (200237) C03C023-00

ADT WO 2002002472 A1 WO 2001-FR2138 20010704; AU 2001072621 A AU 2001-72621

20010704; FR 2811316 A1 FR 2000-8842 20000706

FDT AU 2001072621 A Based on WO 200202472

PRAI FR 2000-8842 20000706

IC ICM C03C015-00; C03C023-00

ICS B60J001-00; C03C017-00; C03C017-02; C03C017-30; C03C017-32;

C09K003-18; E04C002-54; E06B005-00

AB WO 200202472 A UPAB: 20020613

NOVELTY - Transparent substrates can be obtained industrially with super-hydrophobic- oleophobic or superhydrophilic-oleophilic properties with improved optical qualities for windows.

DETAILED DESCRIPTION - A substrate is claimed, of which part of the external surface has the geometry of a web comprising protuberances, at least 80% of which have heights of 40 - 250 nm and mean diameters of 1 - 500 nm. At least 80% of the distances between two neighboring protuberances is 1 - 500 nm.

An INDEPENDENT CLAIM is also included for the method of preparation of the substrates.

USE - The substrates can be used in terrestrial, maritime or air transport vehicle glazing, in buildings, for internal and external decorative elements; also for lenticular screens or microprismatic substrates comprising surface irregularities of 1 μ to 1 mm, or etched substrates for lamps or displays with surface irregularities of 0.1 - 10 μ . The substrate may also present cavities of diameter 0.1 - 500 nm, suitable for chemical or biochemical microreactors.

ADVANTAGE - **Hydrophobic** or hydrophilic compounds may be incorporated in the substrate, or the two types may co-exist. In the latter case, most of a liquid in contact flows over the **hydrophobic** protuberances and only a very small part over the hydrophilic level to form a transparent film. The substrate also has anti-soiling properties.

Dwg.0/1

FS CPI GMPI

FA AB; DCN

MC CPI: A12-L00L; A12-R04; A12-T04A; A12-W11; E05-E02; E31-P03; E31-P06D; J04-X; L01-H08

L54 ANSWER 3 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 2003-113881 [11] WPIX

DNC C2003-029373

TI Biocide-free **antifouling coating**, useful for controlling the fouling of sea going vessels, comprises a nano-scale porous surface as fixation component and a pore filling material as cleaning component.

DC A82 C07 G02

IN BAUM, C; FLEISCHER, L; MEYER, W; SIEBERS, D

PA (WEGE-N) STIFTUNG WEGENER INST POLAR & MEERSFORSC

CYC 26

PI EP 1249476 A2 20021016 (200311)* DE 8p C09D005-16 <--
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
 RO SE SI TR

DE 10117945 A1 20021024 (200311) C09D005-16 <--

ADT EP 1249476 A2 EP 2002-90135 20020406; DE 10117945 A1 DE 2001-10117945
 20010410

PRAI DE 2001-10117945 20010410

IC ICM C09D005-16

ICS C09D007-12; C09K003-18

AB EP 1249476 A UPAB: 20030214

NOVELTY - A biocide-free **antifouling coating** (I),
 comprises:

(A) moving underwater surfaces (sic) for avoiding the deposition of organic fouling materials;

(B) a cleaning component; and

(C) an accompanying fixation component.

The parametric values of which depend on the fouling materials which appear and the circulating conditions.

DETAILED DESCRIPTION - A biocide-free **antifouling coating** (I), having an environmentally neutral self-cleaning hydrodynamic surface properties for circulating underwater surfaces (sic) for avoidance the deposition of organic fouling materials, comprises a cleaning component and an accompanying fixation component, the parametric value of which depends on the fouling materials which appear and the circulating conditions. The **antifouling coating** (AF) comprises a dual composite system in which the fixation component (FC) shows good binding to the underwater surface (SMA), a pore forming component (PFC) in the form of nano-scale irregular relief (NR) with overlapping pores (PO), with a parametric (sic) pore size, depth and thickness, and a cleaning component (PC) as a pore filling component (PFI) in the form of a laminar cleaning film (PL), where this is irregularly perforated at points by individual pore paths (PP) (sic).

USE - (I) is used for controlling the fouling of sea going vessels

ADVANTAGE - The use of a nano-scale porous surface as fixation component and a pore filling material as cleaning component results in a hydrodynamically very smooth surface and improvement of the adhesion of the cleaning component to the underwater surface.

DESCRIPTION OF DRAWING(S) - Figure shows a diagram of the **antifouling coating**.

Large particles FP

Adhesive biopolymers BP

Underwater surface SMA

Antifouling coating AF

Dual composite system CS

Fixation component FC

Cleaning component PC

Pore forming component PFO

Pore filling component PFI

Nano-scale relief NR

Dwg.1/1

FS CPI

FA AB; GI; DCN

MC CPI: A12-B01D; A12-B01W; A12-T05; C04-B04M; C04-C02C; C04-C03B; C05-B02C;
C14-B15; G02-A05G

L54 ANSWER 4 OF 37 COMPENDEX COPYRIGHT 2003 EEI

AN 2002(45):607 COMPENDEX

TI Preparation and research of **hydrophobic** optical **silica**
thin film with variable refractive index.AU Ma, Jian-Hua (Pohl Inst. of Solid Stat Phys. Tongji Univ., Shanghai
200092, China); Wu, Guang-Ming; Wei, Jian-Dong; Cheng, Yin-Bing; Sun, Qi;
When, Jun; Wang, JueSO Yuanzineng Kexue Jishu/Atomic Energy Science and Technology v 36 n 4-5
July 2002 2002.p 335-339

CODEN: YKJIEZ ISSN: 1000-6931

PY 2002

DT Journal

TC Application; Experimental

LA Chinese

AB The preparation and research of **hydrophobic** optical **SiO2**
thin film were reported. The solution was prepared with a sol-gel
process and then **modified** by TMCS (trimethylchlorosilane). The
films were prepared by dip-coating method and different post
methods were used to treat them. Ellipsometry, FTIR and contact angle
instrument were used to measure the physical properties of the thin films.
The results show that the refractive index of thin films are variable in
the range from 1.35 to 1.20, OH groups on the surface of **SiO2**
particles are replaced by CH3 groups, the contact angle is
increased to 137 degree of modified films, which are treated with mixed
ammonia and water, from 40 degree of unmodified films. 8 Refs.CC 741 Light, Optics and Optical Devices; 804 Chemical Products Generally;
931 Applied Physics Generally; 941.4 Optical Variables MeasurementsCT *Optical films; Surface treatment; Ellipsometry; **Silica**;
Physical properties; Hydrophilicity; Refractive index; Sol-gelsST Sol gel process; **Hydrophobic** optical **silica**
thin film; Surface modification

ET O*Si; SiO; Si cp; cp; O cp; H*O; OH; H cp

L54 ANSWER 5 OF 37 COMPENDEX COPYRIGHT 2003 EEI

AN 2003(3):1355 COMPENDEX

TI Surface modification of cyclic olefinic copolymers for bio-mems
microfluidic devices.AU Ahn, C. (Ctr. for BioMEMS and Microchannels University of Cincinnati,
Cincinnati, OH 45221, United States); Kim, S.; Chao, H.; Murugesan, S.;
Beaucage, G.

MT BioMEMS and Bionanotechnology.

ML San Francisco, CA, United States

MD 01 Apr 2002-03 Apr 2002

SO Materials Research Society Symposium - Proceedings v 729 2002.p 131-136
CODEN: MRSPDH ISSN: 0272-9172

PY 2002

MN 60519

DT Conference Article

TC Experimental

LA English

AB Cyclic Olefin copolymers (COC) are a new class of polymers that may prove

to be extremely useful in injection molding of micron scale fluidic devices. In microfluidic devices it is desirable to have a hydrophilic surface such as in flow driven by capillary action. However, such hydrophilic surfaces tend to display protein deposition when contacted with blood unlike **hydrophobic** surfaces. Alternatives to capillary action are then needed to control fluid flow for **hydrophobic** surfaces. Our goal in this research is to tune the slightly **hydrophobic** COC surfaces through simple surface modifications that are amenable to injection molding and other processing methods. In this study, the surface of an injection molded microfluidic component made from COC was modified in order to change the surface properties important to bio-fluidic devices. Some of the techniques used in this study were plasma treatments and ASG (aerosol **gel**) **coating**. Plasma treatments were conducted by using O₂, CF₄ and their combination gas. O₂ treated surfaces became hydrophilic with increasing time of treatment. Combining O₂ and CF₄ made the surfaces more **hydrophobic** compared to CF₄ only. The structural changes after the plasma treatments were examined by ATR (Attenuated Total Reflectance) spectroscopy. Titania and **silica particles** from the ASG process were synthesized from titanium iso-propoxide and tetraethoxysilane, respectively. Titania coated surfaces became more hydrophilic and the **silica** coated surfaces did not have much change in their surface characteristics. The **hydrophobicity** of the plastic surfaces was measured by their contact angle with water. The implication of these treatments on bio-fluidic devices and their adaptation to the injection molding process will also be discussed. 10 Refs.

CC 732.1 Control Equipment; 815.1 Polymeric Materials; 931.2 Physical Properties of Gases, Liquids and Solids; 816.1 Plastics Processing; 802.2 Chemical Reactions; 932.3 Plasma Physics
 CT *Microelectromechanical devices; Wetting; **Silica**; Contact angle; Surface properties; Plasma applications; Aerogels; Copolymers; Surface treatment; Injection molding; Hydrophilicity; **Hydrophobicity**
 ST Cyclic olefinic copolymers; Microfluidic devices; Attenuated total reflectance spectroscopy; Titanium iso propoxide; Tetraethoxysilane
 ET 0

L54 ANSWER 6 OF 37 HCAPLUS COPYRIGHT 2003 ACS DUPLICATE 1
 AN 2001:152790 HCAPLUS
 DN 134:194676

TI **Hydrophobic coating** material containing
modified gels
 IN Jones, Ashley Ward; Lamb, Robert Norman; Zhang, Hua
 PA Unisearch Limited, Australia
 SO PCT Int. Appl., 29 pp.
 CODEN: PIXXD2

DT Patent
 LA English
 IC ICM C09K003-18
 ICS C09D005-00; C09D005-08; C09D005-16; C09D183-06
 CC 42-10 (**Coatings**, Inks, and Related Products)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001014497	A1	20010301	WO 2000-AU993	20000821
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,				

LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
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CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

EP 1210396 A1 20020605 EP 2000-952800 20000821

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL

NZ 517308 A 20020726 NZ 2000-517308 20000821

JP 2003507567 T2 20030225 JP 2001-518815 20000821

PRAI AU 1999-2345 A 19990820

WO 2000-AU993 W 20000821

AB The present invention provides a method of forming a **modified gel** capable of forming a **hydrophobic** surface on which water has a contact angle of at least 150.degree.. The invention also provides a method of forming a **hydrophobic coating** from the **modified gel**. In some embodiments, the **hydrophobic coating** has an extremely high **hydrophobicity** with a contact angle in excess of 165.degree., and good substrate adhesion. The method involves bonding a **gel** with **particulate** matter. It is believed that the chem. **hydrophobicity** of the **gel** is enhanced by the phys. roughness of the **particulate** matter.

ST **modified gel hydrophobic coating**

IT **Silica gel**, uses

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**hydrophobic coating** material contg.

modified gels)

IT **Coating materials**

(**hydrophobic; hydrophobic coating**

material contg. **modified gels**)

IT **7631-86-9, Aerosil 200**, uses

RL: MOA (Modifier or additive use); USES (Uses)

(colloidal; **hydrophobic coating** material contg.

modified gels)

IT **78-10-4DP, Tetraethylorthosilicate, hydrolyzates, reaction**

products with methyltriacetoxysilane **4253-34-3DP,**

Methyltriacetoxysilane, reaction products with tetraethylorthosilicate hydrolyzates

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**hydrophobic coating** material contg.

modified gels)

IT 9016-00-6, PDMS 31900-57-9, Dimethylsilanediol homopolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(**hydrophobic coating** material contg.

modified gels)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Canon Kk; JP 10133002 A 1998 HCAPLUS

(2) Mitsubishi Rayon Co Ltd; JP 05093170 A 1993 HCAPLUS

(3) Shin-Etsu Chemical Co Ltd; EP 0381376 A 1990 HCAPLUS

(4) Toa Gosei Chem Ind Ltd; JP 05001391 A 1993 HCAPLUS

(5) Toshiba Silicone Co Ltd; EP 0430156 A 1991 HCAPLUS

L54 ANSWER 7 OF 37 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:152786 HCAPLUS

DN 134:209422

TI Inorganic polymer coating compositions, their manufacture and use

IN Mechtel, Markus; Puetz, Wolfgang; Schmalstieg, Lutz; Mundstock, Holger; Sonntag, Michael

PA Bayer Aktiengesellschaft, Germany

SO PCT Int. Appl., 36 pp.

CODEN: PIXXD2

DT Patent

LA German

IC ICM C09J183-00

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001014493	A2	20010301	WO 2000-EP7670	20000808
	WO 2001014493	A3	20010719		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	DE 19939152	A1	20010222	DE 1999-19939152	19990820
	DE 10028847	A1	20011220	DE 2000-10028847	20000615
	EP 1210384	A2	20020605	EP 2000-958395	20000808
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL			
	JP 2003507564	T2	20030225	JP 2001-518811	20000808
PRAI	DE 1999-19939152	A	19990820		
	DE 2000-10028847	A	20000615		
	WO 2000-EP7670	W	20000808		
AB	The (nonstick) coating compns. are based on cyclic carbosiloxanes, inorg. polycondensates, and .alpha.,.omega.-difunctional linear oligosiloxanes. Specifically, the compns., with lower VOC content than conventional sol-gel types, comprise (A) a carbosilane or carbosiloxane $Q[(CH_2)_mSiR_1n(OR)_3-n]_p$ [Q = (cyclic) silane or siloxane residue; R = H, C1-4 alkyl, C6-20 aryl, C1-6 acyl; each R1 = C1-18 alkyl, C6-20 aryl; m = 2-6; n = 0-2; p .gtoreq. 2], (B) a polycondensation product of .gtoreq.1 R2aMYb [M = Al, B, Si, Ti, V, Zn, Zr; R2 = (un)substituted C1-14 alkyl or C6-20 aryl; Y = hydrolyzable group; a = 0-3; b = 1-4; a + b = 3-4], (C) ZSiR32[OSiR32]cOSiR32Z [each R3 = alk(en)yl; Z = OH, alkoxy; c = 1-60], (D) catalysts, esp. acid catalysts, and optionally (E) inorg. fillers and/or org. nanoparticles and (F) conventional additives for coatings. Thus, 4.8 mol Si(OEt)4 in EtOH was hydrolyzed with 9.6 mol H2O under catalysis by HCl and the EtOH was displaced by BuOH to give a liq. comprising 50% BuOH and 50% Si(OEt)4 hydrolysis products, which was stable for several months at room temp. A compn. of 2,4,6,8-tetrakis[2-(diethoxymethylsilyl)ethyl]-2,4,6,8-tetramethylcyclotetrasiloxane 63.3, the hydrolysis product above 12.7, H(OSiMe2)NOH 12.7, and 2% TsOH in BuOH 11.3 wt.% was coated at 100 .mu.m on a glass plate and dried 24 h at room temp. to give a graffiti-resistant surface.				
ST	siloxane coating low solvent emission; graffiti resistance silicone				

coating

IT Polyethers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(di-Me siloxane-, Byk 306; inorg. polymer coating compns. for producing graffiti-resistant surfaces)

IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(di-Me, polyether-, Byk 306; inorg. polymer coating compns. for producing graffiti-resistant surfaces)

IT Coating materials
(graffiti-shedding; inorg. polymer coating compns.)

IT 78-10-4DP, Tetraethoxysilane, hydrolyzed 88029-70-3P,
Tetraethoxysilane-triethoxymethylsilane copolymer 155827-81-9P
162746-16-9P, Tetraethoxysilane-triethoxymethylsilane-
triethoxyphenylsilane copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(inorg. polymer coating compns. for producing graffiti-resistant surfaces)

IT 14814-09-6, Triethoxy(3-mercaptopropyl)silane
RL: MOA (Modifier or additive use); USES (Uses)
(inorg. polymer coating compns. for producing graffiti-resistant surfaces)

IT 31692-79-2, .alpha.-Hydro-.omega.-hydroxypoly[oxy(dimethylsilylene)]
31900-57-9D, Dimethylsilanediol homopolymer, hydroxy-terminated
120190-01-4, 2,4,6,8-Tetrakis[2-(diethoxymethylsilyl)ethyl]-2,4,6,8-
tetramethylcyclotetrasiloxane 193201-41-1
RL: TEM (Technical or engineered material use); USES (Uses)
(inorg. polymer coating compns. for producing graffiti-resistant surfaces)

L54 ANSWER 8 OF 37 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:461208 HCAPLUS

DN 135:47657

TI Conductive roll with obstruct of bleeding properties

IN Shimizu, Yuko; Shindo, Takuya; Katayama, Shingo; Yamada, Noriko

PA Suzuka Fuji Xerox Co., Ltd., Japan; Nippon Steel Corp.

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM F16C013-00

ICS F16C013-00; B05D005-12; B05D007-00; C09D001-00; C09D005-24;

C09D183-06; C09D201-00; G03G015-02; G03G015-08; G03G021-10

CC 42-2 (Coatings, Inks, and Related Products)

Section cross-reference(s): 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001173641	A2	20010626	JP 1999-356163	19991215
PRAI	JP 1999-356163		19991215		

AB The roll for electrophotog. copy machine is prepd. by sol-gel coating of an inorg. oxide or an inorg.-org. hybrid on a substrate of a roller. Thus, a coating soln. was made by adding 2:3 (mol) H₂O and EtOH mixt. in a mixt. of tetraisopropoxytitanium 1, EtOH 3, Et acetate 2, and silanol-terminated poly(di-Me siloxane) 0.25 mol mixt.

ST tetraisopropoxytitanium hybrid silanol terminated dimethyl siloxane;

bleeding redn conductive roll; electrophotog copy machine roller
 IT Sol-gel processing
 (coating; conductive roll with obstruct of bleeding properties)
 IT Electrophotographic apparatus
 (rollers; conductive roll with obstruct of bleeding properties)
 IT Coating process
 (sol-gel; conductive roll with obstruct of bleeding properties)
 IT 546-68-9P, Tetraisopropoxytitanium
 RL: DEV (Device component use); IMF (Industrial manufacture); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (hydrolysis, hybrid with siloxane; conductive roll with obstruct of
 bleeding properties)
 IT 9016-00-6DP, Dimethylsilanediol homopolymer, sru,
 silanol-terminated 31900-57-9DP, Dimethylsilanediol homopolymer,
 silanol-terminated
 RL: DEV (Device component use); IMF (Industrial manufacture); PRP
 (Properties); TEM (Technical or engineered material use); PREP
 (Preparation); USES (Uses)
 (hydrolysis, hybrid with tetraisopropoxytitanium; conductive roll with
 obstruct of bleeding properties)

L54 ANSWER 9 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 2002-114076 [15] WPIX

DNC C2002-034896

TI New storage-stable biocidal aerated gels comprising water, a gelling
 agent, silicone-treated **silica** and a biocide useful for
 controlling rodents and insects.

DC A97 C03

IN TWYDELL, R S

PA (SORE-N) SOREX LTD

CYC 96

PI WO 2001080645 A1 20011101 (200215)* EN 19p A01N059-00
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ
 NL OA PT SD SE SL SZ TR TZ UG ZW
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK
 DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ
 LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD
 SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
 AU 2001046691 A 20011107 (200219) A01N059-00
 EP 1276377 A1 20030122 (200308) EN A01N059-00
 R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT
 RO SE SI TR

BR 2001010351 A 20030121 (200309) A01N059-00

ADT WO 2001080645 A1 WO 2001-GB1573 20010406; AU 2001046691 A AU 2001-46691
 20010406; EP 1276377 A1 EP 2001-919630 20010406, WO 2001-GB1573 20010406;
 BR 2001010351 A BR 2001-10351 20010406, WO 2001-GB1573 20010406

FDT AU 2001046691 A Based on WO 200180645; EP 1276377 A1 Based on WO
 200180645; BR 2001010351 A Based on WO 200180645

PRAI GB 2000-27834 20001115; GB 2000-10149 20000427

IC ICM A01N059-00

AB WO 200180645 A UPAB: 20020306

NOVELTY - New storage-stable biocidal aerated gels comprising water, a
 gelling agent, silicone-treated **silica** and a biocide are
 disclosed.

DETAILED DESCRIPTION - A novel storage-stable biocidal aerated gel
 composition comprises 30-97wt.% of water, 0.2-5wt.% of a gelling agent
 selected from xanthan gum, sodium alginate, and neutralized carboxyvinyl

polymer 2-5wt.% of a fine particulate, hydrophobic silicone-treated **silica** having a surface area of 80-300m²/g and 0.004-20wt.% of a biocide, where the composition is in the form of fine **particles** of an aqueous **gel** containing the water, gelling agent and the biocide, the surface of which fine particles are coated with a **coating** of the finely particulate **hydrophobic silica**. An INDEPENDENT CLAIM is also included for a method of preparing a storage-stable, **particulate**, biocidal aerated **gel** composition comprising mixing 30-97wt.% water, 0.0004-20wt.% of a biocide and 2-5wt.% of a fine particulate hydrophobic, silicone-treated **silica** having a surface area of 80-300m²/g under high shear conditions to produce a dispersion, adding to the dispersion 0.2-5wt.% of a gelling agent selected from xanthan gum, sodium alginate and neutralized carboxyvinyl polymer and mixing the composition under high shear conditions to produce fine **particles** of an aqueous **gel**, the surfaces of which are coated with a **coating** of finely particulate **hydrophobic silica**

ACTIVITY - Biocide; Pesticide; Rodenticide; Insecticide.

MECHANISM OF ACTION - None given in the source material.

USE - The compositions can be contacted with pests for the control of pests. The compositions can be used to control rodents (claimed). They can also be used to control insects, e.g. wasps (claimed).

ADVANTAGE - The aerated gel compositions are properly sprayable like liquids using conventional spraying equipment, unlike known pulverulent dry water compositions. The compositions do not normally cause any blocking of nozzles in the spraying equipment unlike known pulverulent dry water compositions although in the event that any blocking does occur the equipment can simply be washed with water, e.g. tap water, to remove the blockage. The water content of the aerated gel composition makes it possible to spray the composition with intended direction, over large distances and enables the composition, when sprayed, to stick to the target.

Dwg.0/0

FS CPI
FA AB; DCN
MC CPI: A12-V; A12-W04C; C04-A07C; C04-C02D; C04-C03B; C05-B02C; C14-B04B;
C14-B09

L54 ANSWER 10 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 2001-604182 [69] WPIX

DNN N2001-450963 DNC C2001-179146

TI Color stain **coatings**, for imparting improved properties to ink-jet media such as paper or films, contains **hydrophobic** or partly **hydrophobic silica**.

DC G02 P75 T04

IN GLAUM, H; MUELLER, A

PA (DEGS) DEGUSSA AG

CYC 27

PI EP 1145862 A1 20011017 (200169)* DE 15p B41M005-00

R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT

RO SE SI

JP 2002012831 A 20020115 (200208) 10p C09D201-00 <--

US 2002040661 A1 20020411 (200227) C08L001-00

ADT EP 1145862 A1 EP 2000-107733 20000411; JP 2002012831 A JP 2001-110418
20010409; US 2002040661 A1 US 2001-829943 20010411

PRAI EP 2000-107733 20000411

IC ICM B41M005-00; C08L001-00; C09D201-00

ICS B41J002-01; C07G001-00; C08H001-00; C08L003-00; **C09D004-00;**
C09D007-12; C09D101-00; C09D103-00;
 C09J004-00; C09J101-00; C09J103-00; **C09K003-00**

AB EP 1145862 A UPAB: 20011126

NOVELTY - A color stain for ink-jet media contains a **hydrophobic** or partly **hydrophobic silica**.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for the inkjet media coated with the color stain.

USE - As a **coating** for ink-jet media such as paper, film or textiles.

ADVANTAGE - The stain gives improvements in wet strength, ink fixing, print quality, color intensity and print sharpness. It also fixes the ink in its own upper layers and allows combination of additive and pigment properties.

Dwg.0/0

FS CPI EPI GMPI

FA AB

MC CPI: G02-A04; G05-F03

EPI: T04-G02E

L54 ANSWER 11 OF 37 RAPRA COPYRIGHT 2003 RAPRA

AN R:835438 RAPRA FS Rapra Abstracts

TI SILICAS: THE MARKET REMAINS WELL ORIENTED.

AU Latieule S

SO Informations Chimie 38, No.425, Feb.2001, p.72-5

ISSN: 0020-045X

CODEN: INFCA8

PY 2001

DT Journal

LA French

AB A survey is made of types of silicas and their applications, including their use as a reinforcing filler in tyres and other rubber products and as additives in plastics and **coating** compositions, and reference is made to developments by a number of companies involved in **silica** production. Trends in the world market for silicas are reviewed, and production capacities are presented for the leading manufacturers of precipitated **silica**.

CC 06; 175; 5; 51SS; 6A31; 6T1

SC *MB; CB; CL; MA; QB; QR

CT ACIDIFICATION; ADDITIVE; ALLIANCE; ANTI-FOAMING AGENT; ANTI-SEDIMENTATION AGENT; ANTIFOAMING AGENT; APPLICATION; BATTERY SEPARATOR; BINDER; CAPACITY; CHEMICAL MODIFICATION; **COATING**; COLOR; COLOUR; COMMERCIAL INFORMATION; COMPANIES; COMPANY; CONSUMPTION; COUPLING AGENT; DATA; DEFOAMING AGENT; DISPERSIBILITY; ECONOMIC INFORMATION; ELASTOMER; ELECTRICAL APPLICATION; ELECTRODIALYSIS; EPOXIDE RESIN; EPOXY RESIN; FILLER; FINANCE; FOOTWEAR; FORECAST; GREEN TIRE; GREEN TYRE; GROWTH RATE; HYDROPHILIC; HYDROPHILICITY; **HYDROPHOBIC**; **HYDROPHOBICITY**; JOINT VENTURE; MANUFACTURER; MARKET; MARKET GROWTH; MASTIC; MATERIAL REPLACEMENT; MATERIALS SUBSTITUTION; MATTING AGENT; MOISTURE ABSORPTION; NEUTRALISATION; NEUTRALIZATION; OPTICAL PROPERTIES; PAINT; PAINTS; **PARTICLE SIZE**; PARTNERSHIP; PE; PH; PLASTIC; POLYEPOXIDE; POLYETHYLENE; POROSITY; PRECIPITATION; PRICE; PRODUCTION; PRODUCTION CAPACITY; PROPERTIES; PYROGENIC; REACTION TIME; REINFORCING FILLER; RUBBER; SHOE; SILICONE ELASTOMER; SILICONE RUBBER; SOLE; SOLES; SOLUTION; SPECIFIC SURFACE; STATISTICS; SURFACE AREA; SURFACE TREATMENT; TECHNICAL; TEMPERATURE; THERMOPLASTIC; THERMOSET; THIXOTROPIC AGENT; TIRE; TRADE NAME; TREAD; TURNOVER; TYRE; WET GRIP

NPT ALUMINIUM SILICATE; ALUMINUM SILICATE; CARBON BLACK; **COLLOIDAL**

**SILICA; PRECIPITATED SILICA; SILANE; SILICA;
SILICA GEL; SILICATE; SILICON DIOXIDE; SODIUM SILICATE;
SODIUM SULFATE; SODIUM SULPHATE; SULFURIC ACID; SULPHURIC ACID**
SHR **STATISTICS, fillers, additives, world; WORLD; FILLERS OF, silica**
**, statistics, company information; FILLERS IN, rubbers, tyres;
COATINGS, plastics, additives; ADDITIVES, plastics,**
coatings, statistics, company information; COMPANY INFORMATION,
fillers, additives, world; TYRES, fillers in
GT WORLD

L54 ANSWER 12 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 2001-105937 [12] WPIX

DNN N2001-078704 DNC C2001-031618

TI Internal equipment material for tunnels consists of surface layer having
silica gel structure containing oxide with non bridging
oxygen existing on outermost surface of surface layer provided on base
material.

DC A23 A93 G02 L02 P43 Q41 Q49

PA (TTOC) TOTO LTD

CYC 1

PI JP 2000291390 A 20001017 (200112)* 10p E21D011-04

ADT JP 2000291390 A JP 1999-72528 19990317

PRAI JP 1999-26160 19990203

IC ICM E21D011-04

ICS B08B001-00; C09D001-02; C09D005-00;

C09D005-16; E01H001-00

AB JP2000291390 A UPAB: 20010302

NOVELTY - Internal equipment material for tunnels (2) consists of surface
layer containing **silica gel** structure (5) formed on a
base material (4). The surface layer has an oxide with nonbridged oxygen
and the oxide exists throughout outermost surface of the surface layer.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the
following: (i) manufacture of the internal equipment material which
involves applying an alkali metal silicate containing solution on the
surface of a base material and heating or baking the base material at
100-600 deg. C; (ii) Stain prevention method of the internal equipment
material in which the surface material has low adhesion with oil and high
adhesion with water. The dust **particles** ejected from the
vehicles interact with moisture in air and adhere to the surface. The
adhered dust is removed with water easily; (iii) cleaning method of the
internal equipment material which involves supplying water to surface of
surface layer and flushing the pollutants adhering to the surface and (iv)
coating material for forming the surface layer of internal
equipment material.

USE - For tunnels of roads.

ADVANTAGE - Surface of the internal equipment material is made
hydrophobic and oil repelling. The soot and dust do not adhere to
surface of the internal equipment easily. Pollutants adhering to internal
equipment material can be flushed easily with water by simply supplying or
injecting water from a transit industrial vehicle, without the need of
brush washing as in conventional cases. The internal equipment material is
washed safely and easily and safety and efficiency of the tunnel are
secured.

DESCRIPTION OF DRAWING(S) - The drawing shows the partial expanded
view of internal equipment material for tunnels.

internal equipment material for tunnels 2
base material 4

silica gel structure 5

Dwg. 2/5
 FS CPI GMPI
 FA AB; GI
 MC CPI: A12-R; G02-A05; L02-A02A; L02-G

L54 ANSWER 13 OF 37 WPIX (C) 2003 THOMSON DERWENT
 AN 2000-156886 [14] WPIX
 DNN N2000-117370 DNC C2000-049002
 TI Undercoat film for photocatalyst films, its formation method, articles containing substrate having photocatalyst film formed on top of it.
 DC D22 G02 J04 L02 P34
 PA (SHOA) SHOWA ALUMINUM CORP
 CYC 1
 PI JP 2000017229 A 20000118 (200014)* 11p C09D183-04 <--
 JP 3300940 B2 20020708 (200247) 11p C09D183-04 <--
 ADT JP 2000017229 A JP 1998-183632 19980630; JP 3300940 B2 JP 1998-183632 19980630
 FDT JP 3300940 B2 Previous Publ. JP 2000017229
 PRAI JP 1998-183632 19980630
 IC ICM C09D183-04
 ICS A61L009-00; C09D005-00; C09K003-00;
 C09K003-18
 AB JP2000017229 A UPAB: 20000323
 NOVELTY - A novel undercoat film (P1) for photocatalyst films contains **SiO2** as a chief component, has been formed by means of sol-gel method, and has been composed of a dense layer (A) and an irregular rough surface layer (B) integrally formed on top of (A), the whole surface of which has been roughened by forming dense fine roughness. DETAILED DESCRIPTION - Also claimed is as an independent claim a method for forming (P1) (M) comprising: (1) sol preparation process wherein a liquid composition containing alkylalkoxysilane (C), solvent, water, and acid catalyst is mixed with fine **SiO2 particle** and stirred to obtain sol; (2) **gel** film formation process wherein the sol prepared in (1) is coated on a substrate and is dried to form a **gel** film; and (3) baking process wherein the **gel** film formed in (2) is baked. And (C) has the next general formula(C).

$$(R1)_nSi(OR2)_4-n(C)$$
 R1 = a **hydrophobic** group like alkyl or phenyl group; R2 = an alkyl group; n = 1 or 2. Also claimed is as an independent claim an article (P2) that contains a substrate having a photocatalyst film on top of the (P1) layer formed on the substrate. the photocatalyst film is formed either (I) by **coating** a **coating** composition that contains semiconductor photocatalyst or a **coating** composition that forms semiconductor photocatalyst by heat treating after **coating** or (II) by forming on the (P1) layer formed on a substrate a photocatalyst film consisting of hydrolysis and polycondensation product of trifunctional silane compound and tetrafunctional silane compound and **TiO2 particle** as photocatalyst.
 USE - (P1) and (M) are suitable for forming on various substrates undercoat layers for **coating** photocatalyst films on top of them, particularly for manufacturing (P2).
 ADVANTAGE - (P1) can notably improve adhesion of photocatalyst films on various substrates.
 Dwg. 0/2
 FS CPI GMPI
 FA AB
 MC CPI: D09-A01; G02-A05E; J04-E04; L02-A02A

L54 ANSWER 14 OF 37 HCAPLUS COPYRIGHT 2003 ACS

AN 1999:448978 HCAPLUS
 DN 131:130900
 TI Antibacterial deodorant sheets and their manufacture by multilayer coating process
 IN Omo, Ryomei; Inako, Yoshihide; Matsukawa, Yosuke; Nakagawa, Eiji
 PA Nissha Printing Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B32B007-00
 ICS B32B009-00; B32B031-00
 CC 38-3 (Plastics Fabrication and Uses)
 Section cross-reference(s): 5, 17, 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11192673	A2	19990721	JP 1998-12160	19980105
PRAI	JP 1998-12160		19980105		

AB The films, useful as food packaging films and sheets in refrigerators, are manufd. by (1) applying water-sol. polymer layers on water-sol. or peelable support, (2) sprinkling antibacterial **particles** or applying aq. dispersion of the **particles** after drying the water-sol. layer, (3) applying a **hydrophobic coating** layer on the water-sol. layer, (4) laminating supports on the **hydrophobic coating** layer, (5) removing the water-sol. or peelable support to expose the water-sol. polymer layer, and (6) removing the remaining water-sol. polymer layer to expose a part of the antibacterial **particles**. Thus, Lumirror (acrylic melamine-treated PET film) was coated with Metolose 60SH (aq. alc. soln.), dried at 80.degree. for 1 min, sprayed with 30-.mu.m flocculated antibacterial TiO2 **particles** [obtained from 30% EtOH soln. of Cera-Statsts 17 (silica sol) and ST 157 (TiO2 fine **particle**) at SiO2-TiO2 ratio 1:2], dried at 120.degree. for 2 min, hot-pressed to burry a part of the antibacterial **particles** in the polymer layer, coated with a fluoropolymer soln. contg. Defensa TR 304 (main agent), Burnock DN 950 (crosslinking agent) and Defensa TN 100 (diluent), dried at 70.degree. for 2 min, and press-laminated with Lumirror at 130.degree., followed by peeling the peelable support from the laminate and washing with water to give an antibacterial deodorant sheet with good antibacterial, antifungal, and deodorizing characteristics.

ST antibacterial deodorant sheet manuf multilayer **coating**; titania **particle** spraying antibacterial deodorant sheet; food packaging sheet antibacterial deodorant; partial exposure antibacterial titania **particle** sheet

IT Silica gel, uses

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); TEM (Technical or engineered material use); BIOL (Biological study); USES (Uses)

(Cera-Statsts 17, antibacterial agent component; manuf. of antibacterial deodorant sheets and their manuf. by multilayer **coating** process)

IT Antibacterial agents

Coating process

Food packaging materials

(manuf. of antibacterial deodorant sheets and their manuf. by multilayer **coating** process)

- IT Polyesters, uses
 RL: BUU (Biological use, unclassified); FFD (Food or feed use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); BIOL (Biological study); PROC (Process); USES (Uses)
 (manuf. of antibacterial deodorant sheets and their manuf. by multilayer **coating** process)
- IT 13463-67-7, ST 157, uses
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); FFD (Food or feed use); TEM (Technical or engineered material use); BIOL (Biological study); USES (Uses)
 (antibacterial agent; manuf. of antibacterial deodorant sheets and their manuf. by multilayer **coating** process)
- IT 233766-66-0P
 RL: BUU (Biological use, unclassified); FFD (Food or feed use); IMF (Industrial manufacture); TEM (Technical or engineered material use); BIOL (Biological study); PREP (Preparation); USES (Uses)
 (**hydrophobic coating**; manuf. of antibacterial deodorant sheets and their manuf. by multilayer **coating** process)
- IT 25038-59-9, uses
 RL: BUU (Biological use, unclassified); FFD (Food or feed use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); BIOL (Biological study); PROC (Process); USES (Uses)
 (manuf. of antibacterial deodorant sheets and their manuf. by multilayer **coating** process)
- IT 9004-65-3, Metolose 60SH
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (manuf. of antibacterial deodorant sheets and their manuf. by multilayer **coating** process)
- IT 9002-89-5, Tosslon ET 20
 RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (peelable support; manuf. of antibacterial deodorant sheets and their manuf. by multilayer **coating** process)

L54 ANSWER 15 OF 37 HCAPLUS COPYRIGHT 2003 ACS

AN 1999:298443 HCAPLUS

DN 130:353749

TI Thermosetting polyol resin compositions and **coatings** based on them having excellent hardness and resistance to staining and chemicals

IN Mizutani, Keita; Tosaki, Yoichi; Sawada, Haruhiko

PA Nippon Paint Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 30 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L083-04

ICS C08K003-36; C08K009-06; C08L033-06; C08L061-32; C08L067-02;
 C08L075-04; C09D005-00; C09D005-16; C09D133-06; C09D161-32;
 C09D167-02; C09D175-04; C09D183-06

CC 42-10 (**Coatings**, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11124501	A2	19990511	JP 1997-308033	19971021
PRAI	JP 1997-308033		19971021		
OS	MARPAT 130:353749				

- AB Title compns. contain film-forming polyol resins having OH value 5-300 mg-KOH/g and no.-av. mol. wt. 500-20,000, curing agents reactive with the resins, organosilica sol having **particle** diam. 10-100 nm and **hydrophobicity** (hexane tolerance value) .gtoreq.15.0 mL, and .gtoreq.1 partially hydrolyzed-condensed compds. of $(R_1)_nSi(OR_2)_{4-n}$ (R_1 = C1-6 alkyl, C1-11 epoxyalkyl, aryl, C1-11 alkenyl, C1-11 aralkyl, C1-4 acyl, C1-5 aminoalkyl, C1-5 mercaptoalkyl, C1-5 haloalkyl; R_2 = C1-6 alkyl, C1-4 acyl; n = 0-2). Films are manufd. by applying (polyurethane-modified) epoxy resin and/or polyester resin primers, applying thermosetting **coatings** contg. the compns., curing, and contacting with water to cool **coating** surface and give it hydrophilicity. Coated materials have water dynamic backward tensile strength .gtoreq.50 dyn/cm and Si concn. at 0-200 (<200) nm depth from their surface .gtoreq.2 times Si concn. at their center part at Si concn. distribution measured by secondary ion mass spectrometry. Thus, an acrylic polyol resin [prepd from Me methacrylate 36.7, Et methacrylate 31.4, 2-hydroxyethyl methacrylate-epsilon.-caprolactone adduct (1:2) 31.9 parts] 21, **silica** sol/MIBK 10, tetraethoxysilane condensed compd. 10, Desmodur BL 3175 9 parts, and dibutyltin laurate were mixed to give a compn., which was applied on a galvanized steel sheet coated with Fleki Coat P600 (polyester primer) and cured to give a **coating** showing hardness 4H and good resistance to stain of rain, felt-tip pen, and carbon black, acids, and alkalis.
- ST thermosetting acrylic polyol resin **coating** hardness; organosilica sol polyol resin **coating**; alkoxysilane polyol resin **coating** staining resistance; chem resistance alkoxysilane polyol resin **coating**
- IT **Coating** materials
(acid-resistant; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT **Coating** materials
(alkali-resistant; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT **Coating** materials
(antisoiling; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT Polysiloxanes, uses
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(polyols; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT Acrylic polymers, uses
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(silicate- and HMDI-crosslinked; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT Fluoropolymers, uses
Polyesters, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT **Silica gel**, uses
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)

- IT Aminoplasts
RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT Galvanized steel
RL: MSC (Miscellaneous)
(thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT **Coating materials**
(thermosetting; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT 224579-10-6P, Desmodur BL 3175-ethyl methacrylate-methyl methacrylate-Placel FM 2-tetramethoxysilane copolymer 224579-15-1P, Ethyl methacrylate-HMDI-methyl methacrylate-Placel FM 2-tetramethoxysilane copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(crosslinking agent; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT 681-84-5D, Tetramethoxysilane, reaction products with methacryloxypropyltrimethoxysilane 822-06-0 2530-85-0D, reaction products tetramethoxysilane 9003-08-1, Cymel 238 12002-26-5, MKC silicate MS56 138726-15-5, Cymel 232 192006-85-2, Desmodur TPLS 2062
RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(crosslinking agents; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT 108-10-1, Methyl isobutyl ketone 1330-20-7, Xylene, uses 35296-72-1, Butanol
RL: NUU (Other use, unclassified); USES (Uses)
(dispersion medium for organosilica sol; thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)
- IT 224579-11-7P, Desmodur BL 3175-ethyl methacrylate-.gamma.-methacryloxypropyltrimethoxysilane-methyl methacrylate-Placel FM 2-tetramethoxysilane copolymer 224579-12-8P, Butyl methacrylate-Desmodur BL 3175-ethyl acrylate-ethyl methacrylate-.gamma.-methacryloxypropyltrimethoxysilane-methyl methacrylate-Placel FM 2-tetramethoxysilane copolymer 224579-13-9P, Coronate 2515-.gamma.-methacryloxypropyltrimethoxysilane-TA 22-293J-tetramethoxysilane copolymer 224579-14-0P, Cymel 235-.gamma.-methacryloxypropyltrimethoxysilane-tetramethoxysilane-Zeffle GK 300 copolymer 224579-17-3P, Ethyl methacrylate-HMDI-.gamma.-methacryloxypropyltrimethoxysilane-methyl methacrylate-Placel FM 2-tetramethoxysilane copolymer 224579-18-4P, Butyl methacrylate-ethyl acrylate-ethyl methacrylate-HMDI-.gamma.-methacryloxypropyltrimethoxysilane-methyl methacrylate-Placel FM 2-tetramethoxysilane copolymer 224579-19-5P, HMDI-.gamma.-methacryloxypropyltrimethoxysilane-TA 22-293J-tetramethoxysilane copolymer 224620-68-2P, Desmodur BL 3175-ES 40-ethyl methacrylate-methyl methacrylate-Placel FM 2 copolymer 224620-69-3P, Desmodur BL 3175-ethyl methacrylate-MKC Silicate MS 51-methyl methacrylate-Placel FM 2 copolymer 224620-70-6P, Ethyl methacrylate-HMDI-MKC Silicate MS 51-methyl methacrylate-Placel FM 2 copolymer 224620-71-7P, Butyl methacrylate-Coronate 2515-ethyl acrylate-ethyl methacrylate-.gamma.-methacryloxypropyltrimethoxysilane-methyl methacrylate-Placel FM 2-MKC silicate MS 56-tetramethoxysilane

copolymer 224620-72-8P, ES 40-ethyl methacrylate-HMDI-methyl methacrylate-Placel FM 2 copolymer 224620-73-9P, Butyl methacrylate-ethyl acrylate-ethyl methacrylate-HMDI-.gamma.-methacryloxypropyltrimethoxysilane-methyl methacrylate-Placel FM 2-MKC silicate MS 56-tetramethoxysilane copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)

IT 9003-08-1, Sumimal M 40S

RL: MOA (Modifier or additive use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)

(thermosetting resin compns. for **coatings** having good hardness and staining and chem. resistance)

L54 ANSWER 16 OF 37 HCAPLUS COPYRIGHT 2003 ACS

AN 1998:650862 HCAPLUS

DN 129:334527

TI Multilayered transparent water-repellent film **coatings** and their preparation

IN Nishimori, Hideki; Hashimoto, Akira; Tada, Kyoshi; Munemiya, Kazuhisa

PA Showa Aluminium Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C03C017-30

CC 57-2 (Ceramics)

Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10265242	A2	19981006	JP 1997-69844	19970324
PRAI	JP 1997-69844		19970324		

AB The **coatings** comprise SiO₂-based oxide films formed by sol-gel processing and top **coating** films of sols mainly contg. silane coupling agents having fluorocarbon chains. The oxide films are composed of densified layers and surface-roughened upper layers having minute unevenness. The water-repellent film **coatings** are prepd. by the following steps; (1) applying sols contg. R₁nSi(OR₂)_{4-n} (R₁ = **hydrophobic** group such as alkyl, Ph; R₂ = alkyl; n = 1, 2), solvents, water, acid catalysts, and oxide **particles** on substrates, (2) drying the sols to give **gels**, (3) firing the **gels** to give the oxide films, (4) applying sols contg. the silane coupling agents, alcs., water, and acid catalysts on the oxide film, and (5) drying and heat treatment at .ltoreq.400.degree..

ST water repellent transparent **coating** siloxane; ceramic sol **gel coating** water repellent; fluoroalkylsilane homopolymer **coating** water repellent transparent; fluorosilicone **coating** water repellent transparent

IT Polysiloxanes, preparation

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(fluoroalkyl-contg.; prepn. of water-repellent transparent **coatings** comprising SiO₂-based oxide primer films and fluoroalkyl-contg. siloxane top films)

IT **Coating** materials

- (multilayer; prepn. of water-repellent transparent **coatings** comprising **SiO₂**-based oxide primer films and fluoroalkyl-contg. siloxane top films)
- IT Sol-gel processing
(prepn. of water-repellent transparent **coatings** comprising **SiO₂**-based oxide primer films and fluoroalkyl-contg. siloxane top films)
- IT Coating materials
(transparent; prepn. of water-repellent transparent **coatings** comprising **SiO₂**-based oxide primer films and fluoroalkyl-contg. siloxane top films)
- IT Coating materials
(water-resistant; prepn. of water-repellent transparent **coatings** comprising **SiO₂**-based oxide primer films and fluoroalkyl-contg. siloxane top films)
- IT 7631-86-9, **Silica**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**coatings**; prepn. of water-repellent transparent **coatings** comprising **SiO₂**-based oxide primer films and fluoroalkyl-contg. siloxane top films)
- IT 7631-86-9P, **Silica**, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(primer **coatings** prepd. by sol-gel process; prepn. of water-repellent transparent **coatings** comprising **SiO₂**-based oxide primer films and fluoroalkyl-contg. siloxane top films)
- IT 2031-67-6, Methyltriethoxysilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(sol-gel processing of; in prepn. of water-repellent transparent **coatings** comprising **SiO₂**-based oxide primer films and fluoroalkyl-contg. siloxane top films)
- IT 83048-65-1P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(top **coatings**; prepn. of water-repellent transparent **coatings** comprising **SiO₂**-based oxide primer films and fluoroalkyl-contg. siloxane top films)
- L54 ANSWER 17 OF 37 JICST-EPlus COPYRIGHT 2003 JST
AN 990049866 JICST-EPlus
TI Development of Hydrophilic Outside Mirror Coated with Titania Photocatalyst.
AU HATA SATOKO; KAI YASUAKI; YAMANAKA ISAO; OSAKI HIROSHI
HIROTA KAZUO
YAMAZAKI SEIJI
CS Nissan Mot. Co., Ltd.
Ichikoh Ind. Ltd.
Cent. Glass Co., Ltd.
SO Jidosha Gijutsukai Gakujutsu Koenkai Maezurishu, (1998) no. 66-98, pp. 21-24. Journal Code: S0434A (Fig. 10, Tbl. 1, Ref. 5)
ISSN: 0919-1364
CY Japan
DT Conference; Short Communication
LA Japanese
STA New
AB A new outside mirror which enhances rearward visibility on a rainy day has been developed using a **TiO₂-SiO₂ coating** on the glass

base. Prepared by the sol-gel process, the **coating** spreads out rain droplets on the mirror surface into a thin film of water by a photocatalytic hydrophilic effect in the $\text{TiO}_2\text{-SiO}_2$. This mirror maintains its good hydrophilicity for a long time, and when **hydrophobic** contaminations collect on the glass surface, the sun's radiation induces a photocatalytic effect that serves to decompose the contaminations. Furthermore, the new mirror has sufficiently high durability for use in the severe automotive environment. (author abst.)

CC QG03060R (629.33.02)

CT rear view mirror; titanium oxide; photocatalyst; hydrophilic; water droplet; visual recognition; conduction band; electron; valence band; positive hole; organic substance; oxidation; abrasion resistance; **silicon dioxide**; sol-gel transition

BT automotive fitting; reflecting mirror; mirror; optical system; metal oxide; oxide; chalcogenide; oxygen group element compound; oxygen compound; titanium compound; 4A group element compound; transition metal compound; catalyst; affinity; property; droplet; recognition; band structure; energy level; charged **particle**; lepton; elementary **particle**; chemical reaction; mechanical property; resistance(endure); silicon oxide; silicon compound; carbon group element compound; phase transition

L54 ANSWER 18 OF 37 HCAPLUS COPYRIGHT 2003 ACS

AN 1997:731483 HCAPLUS

DN 127:360013

TI UV-absorbing composite **powders** and their manufacture

IN Kanamaru, Tetsuya; Fukui, Hiroshi

PA Shiseido Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09C003-12

ICS A61K007-02; A61K007-42; C08K009-12; C09D005-32; C09D007-12; C09K003-00

CC 42-5 (**Coatings**, Inks, and Related Products)

Section cross-reference(s): 38, 62

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09286928	A2	19971104	JP 1996-159584	19960620
PRAI	JP 1996-31048		19960219		

AB Title **powders**, useful for **coatings**, cosmetics, and plastic moldings, are prepd. by dissolving UV absorbents in org. solvents, adding **hydrophobic powders**, adding water, and pptg. to form uniformly UV absorbent-coated **powders**. An acrylic **coating** contg. 2-(2-hydroxy-5-methylphenyl)benzotriazole-coated polysiloxane-treated TiO_2 **powders** showed good light resistance.

ST cosmetic UV absorbent coated inorg **powder**; **coating** UV absorbing composite; plastic molding UV absorbing composite

IT Cosmetics

UV stabilizers

(UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)

IT Molded plastics, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)

(UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)

- IT Acrylic polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**coating** binders; UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- IT Polysiloxanes, uses
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**hydrophobic coatings**, on inorg. **powders**;
UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- IT Containers
(plastics; UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- IT Oxides (inorganic), uses
Silica gel, uses
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**powd.**; UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- IT **Coating materials**
(weather-resistant; UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- IT 90-50-6D, 3,4,5-Trimethoxy cinnamic acid, esters 131-57-7,
2-Hydroxy-4-methoxybenzophenone 2440-22-4, 2-(2-Hydroxy-5-methylphenyl)benzotriazole 70356-09-1, 4-Methoxy-4'-tert-butylidibenzoylmethane 198562-76-4
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(UV absorbent; UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- IT 9004-73-3, Poly[oxy(methylsilylene)] 49718-23-2,
Methylhydrogensilanol diol homopolymer
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**hydrophobic coatings**, on inorg. **powders**;
UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- IT 9002-88-4, Polyethylene 9003-53-6, Polystyrene
RL: PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(moldings; UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- IT 1314-13-2, Zinc oxide, uses 12174-53-7, Sericite 13463-67-7, Titanium oxide (TiO₂), uses 14807-96-6, Talc, uses
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**powd.**; UV absorbent-coated inorg **powder** composites for cosmetics and **coatings** and plastic moldings)
- L54 ANSWER 19 OF 37 WPIX (C) 2003 THOMSON DERWENT
AN 1997-077306 [07] WPIX
DNC C1997-024823
TI Prodn. of degradable thin-walled cups, plates, trays etc. - by mixing starch with parting cpd., polyvinyl alcohol, water and opt. thickener and other additives, and baking in mould.
DC A11 A14 A26 A32 A92
IN LAWTON, J W; SHOGREN, R L; TIEFENBACHER, K; SHORGREN, R L

PA (KHAS-N) KHASHOGGI IND LLC E; (HAAS-N) HAAS WAFFELMASCHINEN FRANZ;
(HAAS-N) HAAS WAFFELMASCHINENIND GMBH FRANZ; (HAAS-N) HAAS WAFFELMASCH IND
GMBH FRANZ

CYC 63

PI WO 9700015 A1 19970103 (199707)* DE 31p A21D013-00
RW: AT BE CH DE DK EA ES FI FR GB GR IE IT LU MC NL PT SE
W: AL AM AU BB BG BR CA CN CZ EE FI GE HU IS JP KE KG KP KR LK LR LS
LT LV MD MG MK MN MW MX NO NZ PL RO SD SG SI SK TR TT UA UG US UZ
VN

AU 9658873 A 19970115 (199718) A21D013-00
EP 833564 A1 19980408 (199818) DE A21D013-00
R: AL AT BE CH DE DK ES FR GB GR IE IT LI LT LU LV MC NL PT SE SI
CN 1196658 A 19981021 (199910) A21D013-00
JP 11507543 W 19990706 (199937) 35p A21D013-00
AU 714445 B 20000106 (200013) A21D013-00
KR 99022991 A 19990325 (200024) A21D013-00
US 6146573 A 20001114 (200060) B28B005-00
AT 9501026 A 20010715 (200150) A21D013-08
AT 408709 B 20020115 (200208) A21D013-08

ADT WO 9700015 A1 WO 1996-AT107 19960614; AU 9658873 A AU 1996-58873 19960614;
EP 833564 A1 EP 1996-915905 19960614, WO 1996-AT107 19960614; CN 1196658 A
CN 1996-196286 19960614; JP 11507543 W WO 1996-AT107 19960614, JP
1997-502400 19960614; AU 714445 B AU 1996-58873 19960614; KR 99022991 A WO
1996-AT107 19960614, KR 1997-709461 19971215; US 6146573 A Cont of WO
1996-AT107 19960614, US 1997-990345 19971215; AT 9501026 A AT 1995-1026
19950614; AT 408709 B AT 1995-1026 19950614

FDT AU 9658873 A Based on WO 9700015; EP 833564 A1 Based on WO 9700015; JP
11507543 W Based on WO 9700015; AU 714445 B Previous Publ. AU 9658873,
Based on WO 9700015; KR 99022991 A Based on WO 9700015; AT 408709 B
Previous Publ. AT 9501026

PRAI AT 1996-1038 19960613; AT 1995-1026 19950614

REP EP 97038; WO 9112186; WO 9413737; WO 9515894

IC ICM A21D013-00; A21D013-08; B28B005-00

ICS A21D002-14

AB WO 9700015 A UPAB: 19970212

The prodn. of degradable thin-walled moulded prods., such as cups, plates,
fast food packs, trays, flat sheets etc., comprises placing a starch-based
bake material (I) on the lower mould part of a multi-part mould, then
baking and conditioning to a moisture content of 6-22 wt%. Material (I)
contains, in addn. to (a) water and (b) starch or starch mixts. and/or
flour or flour mixts. and/or starch derivs., (c) a parting cpd., i.e.
medium- or long-chain, opt. substd. fatty acid(s) and/or salts and/or
derivs. thereof, e.g. amides, and/or a poly- methylhydrogensiloxane and
opt. (d) thickeners such as swelling starch, prepasted starch or baking
waste, and/or guar flour, pectin, carob seed flour, carboxymethylcellulose
and/or gum arabic, (e) fibres such as high-cellulose materials, plant
fibres, or plastic, glass, metal or carbon fibres, (f) non- fibrous
fillers such as CaCO₃, carbom, talcum, TiO₂, **silica gel**
, Al₂O₃, shellac, soya protein or **powdered** wheat gum, chicken
protein, casein or dye, (g) a Zr salt such as ammonium Zr carbonate and/or
acetate, and/or (h) preservatives and antioxidants. Polyvinyl alcohol
(PVA) with a deg. of polymerisation of more than 1000, pref. more than
1600, esp. pref. more than 2000, is also added to the baking mixt. in
amts. of 0.5-40 wt% w.r.t. starch prod., and the water content of the
mixt. is 100-360 wt% w.r.t. starch prod.

Pref. the parting cpd. (c) comprises (c1) stearates of Mg, Ca or Al
in amts. of 0.05-20 wt% w.r.t. (b) and at least 10 wt% w.r.t. PVA content,
or (c2) polymethylhydrogensiloxane in amts. of 0.025-11 wt% w.r.t. (b) and

at least 5 wt% w.r.t. PVA, or (c3) monostearyl citrate in amts. of 0.025-12 wt% w.r.t. (b) and at least 5 wt% w.r.t. PVA, with the proviso that, at concns. above 0.5 wt%, this is at least partly neutralised with NaOH, KOH, ammonia soln., waterglass or Ca(OH)₂ to give a bake material with a pH of not less than 5.0, pref. not less than 6.0. Any combination of (c1), (c2) and (c3) may be used, provided that the total concn. is not less than the lowest or more than the highest individual concn. Pref. (c) is a mixt. of (c2) and (c3). The bake material also contains ion-forming cpds. to modify the starch prod. during the baking process, esp. Ca(OH)₂ and/or CaSO₄.

ADVANTAGE - The addn. of PVA gives thin-walled prods. with better flexibility (less brittleness), increased resistance to water and better compatibility (adhesion) with **hydrophobic** outer **coatings**

Dwg.0/0

FS

CPI

FA

AB

MC

CPI: A03-A00A; A07-A01; A08-M03B; A09-A07; A10-E09B; A11-B01; A12-P06

L54 ANSWER 20 OF 37 JAPIO COPYRIGHT 2003 JPO

AN 1997-178720 JAPIO

TI ANALYSIS OF NON-FLUORINE BASED OIL-SOLUBLE COMPOUND

IN KAMIUSUKI TOSHIKI; KADODE TAKASHI; OKAWA NAOSHI; NAKAHEYA YOSHIHIRO

PA NEOS CO LTD

PI JP 09178720 A 19970711 Heisei

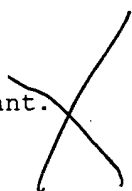
AI JP 1995-341927 (JP07341927 Heisei) 19951227

PRAI JP 1995-341927 19951227

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1997

IC ICM G01N030-48

AB PROBLEM TO BE SOLVED: To realize excellent separation/analysis of **hydrophobic** compound through liquid chromatography using reversed moving phase by employing a homogenized sample and the like in surfactant. SOLUTION: A surfactant is not limited so long as a non-fluorine based oil-soluble compound can be homogenized into water and a cationic surfactant is employed, for example. A tiller produced by modifying or **coating particles of silica gel** or zircoraia with fluorocarbon is employed for liquid chromatography. Water soluble organic solvent being employed in reversed moving phase is not limited so long as the solvent can be mixed with water. A sample prepared by dissolving a non-fluorine based oil-soluble compound into water using a surfactant, and a sample prepared by dissolving a non-fluorine based oil-soluble compound into a solvent containing an organic solvent incompatible with water are subjected to liquid chromatography using a reversed moving phase thus eliminating the tailing of peak and performing analysis with good peak shape. COPYRIGHT: (C)1997,JPO



L54 ANSWER 21 OF 37 HCAPLUS COPYRIGHT 2003 ACS

AN 1995:913317 HCAPLUS

DN 123:317011

TI **Antifouling** paint containing compounds to improve viscosity stability and durability of films in seawater

IN Tanaka, Hiroyuki; Tai, Seiji; Kamijima, Koichi; Wada, Yumiko; Mamiya, Tsutomu; Murakami, Makoto; Yoshida, Teruo

PA Hitachi Chemical Co., Ltd., Japan

SO Eur. Pat. Appl., 68 pp.

CODEN: EPXXDW

DT Patent

LA English
 IC ICM C09D005-14
 ICS C09D135-00
 ICI C09D135-00, C09D201-00
 CC 42-5 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 60

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 659848	A2	19950628	EP 1994-309674	19941222
	EP 659848	A3	19960605		
	R: DE, GB, NL				
	JP 08085773	A2	19960402	JP 1994-249569	19941014
	US 5646198	A	19970708	US 1994-360316	19941221
PRAI	JP 1993-327096		19931224		
	JP 1994-6082		19940125		
	JP 1994-6083		19940125		
	JP 1994-29486		19940228		
	JP 1994-86479		19940425		
	JP 1994-89680		19940427		
	JP 1994-91631		19940428		
	JP 1994-98271		19940512		
	JP 1994-169542		19940721		
	JP 1994-249569		19941014		

AB A coating compn. comprises (A) a polymer obtained by polymg.
 (a1) .gtoreq.1 unsatd. acid anhydrides of unsatd. carboxylic acids and
 (a2) .gtoreq.1 other unsatd. monomers, and (B) .gtoreq.1 compd. selected
 from either or both of (b1) a compd. comprising amino acids, compds.
 having .gtoreq.1 carboxyl groups, compds. having both **hydrophobic**
 and hydrophilic groups, chelate compds., hydroxyl- or acetyl-substituted
 carboxylic acid esters, ion-exchangable layer clay minerals, and
powders of inorg. materials made lipophilic with an org. material,
 and (b2) a group of crystallizable polyether compds., polyester compds.,
 polyether-polyester compds., olefinic glycol compds., acrylic esters,
 methacrylic esters, and polycarbonate compds., by mixing with a Cu compd.
antifoulant, and optionally (C) an anti-thickening agent.

ST **antifouling** paint stable viscosity; addn polymer copper
antifouling paint; amino acid additive **antifouling** paint
 stable; ester additive **antifouling** paint stable; clay additive
antifouling paint stable; polyester additive **antifouling**
 paint stable; polyether additive **antifouling** paint stable;
 chelate additive **antifouling** paint stable; phosphorous compd
 additive **antifouling** paint stable; glycol additive
antifouling paint stable; acrylate additive **antifouling**
 paint stable

IT Amino acids, uses
 Fatty acids, uses
 Glycols, uses
 Polyesters, uses
 Polyethers, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material
 use); USES (Uses)
 (antifouling paint contg. compds. to improve viscosity
 stability and durability of films in seawater)

IT **Silica gel**, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material
 use); USES (Uses)
 (octadecyl-modified; antifouling paint contg.)

- comps. to improve viscosity stability and durability of films in seawater)
- IT Mica-group minerals, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(sodium fluorosilicic; **antifouling** paint contg. compds. to improve viscosity stability and durability of films in seawater)
- IT Glycols, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(C16-18, **antifouling** paint contg. compds. to improve viscosity stability and durability of films in seawater)
- IT Coating materials
(**antifouling**, paint contg. addn. polymer and compds. to improve viscosity stability and durability of films in seawater)
- IT Coordination compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(chelates, **antifouling** paint contg. compds. to improve viscosity stability and durability of films in seawater)
- IT Fouling control agents
(**coatings**, paint contg. addn. polymer and compds. to improve viscosity stability and durability of films in seawater)
- IT Carboxylic acids, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(di-, **antifouling** paint contg. compds. to improve viscosity stability and durability of films in seawater)
- IT Acids, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(dibasic, **antifouling** paint contg. compds. to improve viscosity stability and durability of films in seawater)
- IT Polyethers, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polyester-, **antifouling** paint contg. compds. to improve viscosity stability and durability of films in seawater)
- IT Polyesters, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polyether-, **antifouling** paint contg. compds. to improve viscosity stability and durability of films in seawater)
- IT 1317-39-1, Cuprous oxide, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(**antifoulant**; **antifouling** paint contg. compds. to improve viscosity stability and durability of films in seawater)
- IT 56-40-6, Glycine, uses 56-41-7, L-Alanine, uses 56-87-1, L-Lysine, uses 60-00-4, EDTA, uses 61-82-5, 3-Amino-1H-1,2,4-triazole 61-90-5, L-Leucine, uses 63-91-2, L-Phenylalanine, uses 70-47-3, L-Asparagine, uses 71-00-1, L-Histidine, uses 72-18-4, L-Valine, uses 73-22-3, L-Tryptophane, uses 79-10-7D, 2-Propenoic acid, esters 79-41-4D, esters 95-14-7, 1,2,3-Benzotriazole 95-14-7D, 1H-Benzotriazole, derivs. 97-64-3, Ethyl lactate 105-45-3, Methyl acetoacetate 111-20-6, Decanedioic acid, uses 111-61-5, Ethyl stearate 115-86-6, Triphenyl phosphate 124-04-9, Hexanedioic acid, uses 288-88-0, 1H-1,2,4-Triazole 289-06-5D, Thiadiazole, derivs. 547-64-8, Methyl

lactate 628-97-7, Ethyl palmitate 791-28-6, Triphenylphosphine oxide 2495-27-4, Hexadecyl methacrylate 9003-63-8, Polybutyl methacrylate 16418-17-0 25322-68-3 29674-47-3, Methyl.alpha.-hydroxybutyrate 52089-54-0, Ethyl.alpha.-hydroxybutyrate 114471-22-6, Placel 230 170618-06-1, Lucentite SAN

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(antifouling paint contg. compds. to improve viscosity stability and durability of films in seawater)

IT 26284-14-0, Butyl methacrylate-methacrylic acid copolymer 26300-51-6, Acrylic acid-butyl acrylate-methyl methacrylate copolymer 68103-60-6, Butyl methacrylate-maleic anhydride copolymer 162545-06-4 170221-88-2 170221-89-3 170221-90-6 170221-91-7 170221-92-8 170221-93-9

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(antifouling paint contg. compds. to improve viscosity stability and durability of films in seawater)

L54 ANSWER 22 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 1995-394160 [51] WPIX

DNN N1995-287394 DNC C1995-169685

TI Non-toxic sealing layer for liquid releasing toxic vapours - comprises liq. of low vapour pressure mixed with low density **particles** and chemically inert to liq. being covered by layer.

DC A97 E19 P35

IN LUNETEAU, J

PA (AQOR) ELF ATOCHEM SA

CYC 15

PI EP 682957 A1 19951122 (199551)* FR 7p A62D003-00

R: BE CH DE ES FR GB IT LI NL PT

FR 2720004 A1 19951124 (199603) 14p A62D003-00

NO 9501912 A 19951120 (199603) B01J019-16

JP 07316540 A 19951205 (199606) 5p C09K003-10 <--

FI 9502368 A 19951118 (199607) A62D003-00

CA 2149487 A 19951118 (199609) FR C09K003-00 <--

CN 1125153 A 19960626 (199748) A62D005-00

ADT EP 682957 A1 EP 1995-400992 19950502; FR 2720004 A1 FR 1994-5999 19940517;

NO 9501912 A NO 1995-1912 19950515; JP 07316540 A JP 1995-142594 19950517;

FI 9502368 A FI 1995-2368 19950516; CA 2149487 A CA 1995-2149487 19950516;

CN 1125153 A CN 1995-104858 19950516

PRAI FR 1994-5999 19940517

REP EP 2932821; EP 537999; FR 2553011; US 4414246; WO 9013488

IC ICM A62D003-00; A62D005-00; B01J019-16; **C09K003-00**;

C09K003-10

ICS B65D090-42; **C09K003-32**

AB EP 682957 A UPAB: 19951221

A new compsn. formulated to provide a non-toxic sealant **coating**

(A) over a liq. (B) releasing vapours or toxic emissions by evapn. or reaction with atmos. agents.

The compsn. comprises the following mixt:

(1) (C) - a liq. of low vapour pressure, miscible or immiscible with (B), and chemically inert towards (B); and

(2) (D) - low density solid **particles** - inert to (B) and (C) chosen to increase the density of liq. (C) relative to (B) to constitute a mixt. (A) which will float on (B), even if (C) is miscible with (B) and/or has a density approaching (or even greater than) (B). In this case, miscibility is prevented by previous wetting of the solid **particles** by (C).

Also claimed is the procedure for creating a sealing layer (A) over the liq. (B).

Cpd. (C) comprises at least one cpd. chosen from di-octyl phthalate, di(2-ethylhexyl)phthalate and the silicones. The solid **particles** (D) are glass micro-balls. The liq. (C) comprises 95-81% (wt.) of the mixt. (C)+(D), and the **particles** (D) 5-19% of the mixt.

The compsn. also contains a thixotropic agent (E), inert vis-a-vis liq. (B) to increase the viscosity of (C) (if need be), giving a pasty consistency, to reduce or nullify convection phenomena between (B) and (C). The agent is pref. a **hydrophobic silica gel**, which limits the interaction of atmospheric humidity vis-a-vis the sealing layer (A) and liq. (B). and attenuates sepn. phenomena of liq. (C) : solid (D).

The amt. of agent (E) is up to 5% (wt.) of the mixt. (C)+(D).

Also included is a spreading agent (F), (inert vis-a-vis liq. B) which comprises a low viscosity liq. favouring the spreading of (A) over (B) and joining around obstacles.

USE - The compsn. is formulated to provide a sealing layer over a liq. releasing vapour or toxic emissions, such as H₂S, HCl, Cl₂, SO₂, etc. on contact with a moist atmos. Such liquids are e.g. SCl₂, S₂Cl₂, PCl₃, etc. In factory conditions they are stored in vats placed over retaining tanks (as illustrated in fig. 1) which will receive the liq. in the event of accidental spillage thus preventing spreading over a wide area and limiting pollution.

ADVANTAGE - The combination of a **particulate** solid with a liq. (miscible or immiscible with (B)) to give (A) defined by the invention, has been found to give satisfactory sealant qualities.
Dwg.1/1

FS CPI GMPI

FA AB; GI; DCN

MC CPI: A12-W11F; E10-G02F1; E31-F05; E31-K07

L54 ANSWER 23 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 1993-331574 [42] WPIX

DNC C1993-146956

TI Spherical polyurethane **gel** fine **particles** having good fluidity - has **hydrophobic silica** covering surface of three-dimensionally crosslinked spherical polyurethane **gel** fine **particles**, useful as modifiers for imparting e.g. heat resistance to paints etc..

DC A25 A60 G02

PA (DAIC) DAINICHISEIKA COLOR & CHEM MFG; (UKIM-N) UKIMA GOSEI KK

CYC 1

PI JP 05239340 A 19930917 (199342)* 9p C08L075-04

JP 2845016 B2 19990113 (199907) 9p C08G018-00

ADT JP 05239340 A JP 1992-72984 19920226; JP 2845016 B2 JP 1992-72984 19920226

FDT JP 2845016 B2 Previous Publ. JP 05239340

PRAI JP 1992-72984 19920226

IC ICM C08G018-00; C08L075-04

ICS C08G018-08; C08J003-12; C08J003-24

ICA C08K009-02

ICI C08L075:04

AB JP 05239340 A UPAB: 19931202

Spherical polyurethane **gel** fine **particles** comprise three-dimensionally crosslinked spherical polyurethane **gel** fine **particles** having their surface covered with a **hydrophobic silica**.

In a pref. prepn., a polyisocyanate cpd. and an active

hydrogen-bearing cpd. with at least one of the two being at least trifunctional are three-dimensionally reacted by emulsion polymerisation in inactive liq. using a **hydrophobic silica** as emulsifier. The obtd. polymer is then taken out as a **powder**.

Pref. the **hydrophobic silica** is obtd. by substituting OH gps. on the hydrophilic **silica** surface by $-(CH_2)_n-CH_3$, $-(Si(CH_3)_2O)_m-Si(OCH_3)_3$ or $-(CF_2)_p-CF_3$, (n is 0-7, m is 1-7 and p is 3-11).

USE/ADVANTAGE - The **particles** have a controlled **particle** dia. and good fluidity and therefore handling properties. They are useful as modifier for imparting oil absorption properties and heat and wear resistance to paints, **coatings**, resins, rubber and elastomers.

Dwg.0/2

FS CPI
FA AB
MC CPI: A05-G01B; A12-B01K; A12-S09; G02-A02H

L54 ANSWER 24 OF 37 JAPIO COPYRIGHT 2003 JPO

AN 1993-311107 JAPIO

TI SOLID PAINTING MATERIAL

IN KANO YOSHIMI; SEKI KOJI

PA BUNCHIYOU:KK

KOTOBUKI:KK

PI JP 05311107 A 19931122 Heisei

AI JP 1992-114893 (JP04114893 Heisei) 19920507

PRAI JP 1992-114893 19920507

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993

IC ICM C09D013-00

ICS B43K019-00; C09D013-00

AB PURPOSE: To obtain the solid painting material containing a specific **gel**-forming substance, a coloring agent and a **powdery** cellulose, excellent in coloring property, hiding power and strength and excellent in painting properties in double coat painting and useful as a retouching agent when a white pigment is used as a coloring agent. CONSTITUTION: The painting material contains (A) an alkali metal salt or an ammonium salt of 8-36C aliphatic carboxylic acid (preferably sodium myristate or sodium palmitate) as a **gel**-forming substance, (B) a coloring agent and (C) a **powdery** cellulose (preferably having $\leq 100\mu m$ average **particle** diameter). Based on total weight of the pointing material, the component A is preferably used in a ratio of 8-20% and the component B is preferably used in a ratio of 10-35% in the case of an inorganic pigment and in a ratio of 2-10% in the case of an organic pigment and the component C is preferably used in a ratio of 2-8%. Furthermore, titanium oxide is preferably used as the component B in the case of a white pigment. A **hydrophobic silica** and a water soluble resin are preferably further blended therewith in order to improve **coating** properties to the painting material. COPYRIGHT: (C)1993, JPO&Japio

L54 ANSWER 25 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 1992-294208 [36] WPIX

DNC C1992-130772

TI Packing material for column used in sepn. of pref. protein liq. sample - comprises porous support coated with silicone polymer having hydrophobic and hydrophilic bonds.

DC A89 B04 D16 J04

IN KANDA, T; OHTSU, Y; SAKAMOTO, A; YOKOUCHI, M

PA (SHIS) SHISEIDO CO LTD

CYC 9

PI EP 501786 A1 19920902 (199236)* EN 47p B01J020-32

R: CH DE FR GB IT LI SE

JP 05072190 A 19930323 (199317) 24p G01N030-48

EP 501786 B1 19960417 (199620) EN 49p B01J020-32

R: CH DE FR GB IT LI SE

DE 69209872 E 19960523 (199626) B01J020-32

US 5672422 A 19970930 (199745) 39p B32B003-26

JP 3219296 B2 20011015 (200164) 22p G01N030-48

ADT EP 501786 A1 EP 1992-301636 19920226; JP 05072190 A JP 1992-47880

19920203; EP 501786 B1 EP 1992-301636 19920226; DE 69209872 E DE

1992-609872 19920226, EP 1992-301636 19920226; US 5672422 A US 1992-841157

19920225; JP 3219296 B2 JP 1992-47880 19920203

FDT DE 69209872 E Based on EP 501786; JP 3219296 B2 Previous Publ. JP 05072190

PRAI JP 1991-57785 19910228

REP 1.Jnl.Ref; EP 207784; EP 269447; EP 425104; EP 50167; GB 2074892; US 4909935; 01Jnl.Ref

IC ICM B01J020-32; B32B003-26; G01N030-48

ICS B01D015-08; B01J020-26; B05D003-04; B29C067-00; D04H001-64

AB EP 501786 A UPAB: 19931112

Material comprises a porous support coated with a silicone polymer having an Si-R bond and also having an Si-R1 bond where R = a hydrophobic gp.; and R1 = a hydrophilic gp.

Prepn. of a packing material for a column comprises: (a) coating a porous support with silicone polymer; and (b) modifying at least a part of the -SH residues of the coated silicone polymer with (1) a hydrophilic gp. R1 and (2) a hydrocarbon gp. R having resp. double bonds to form Si-R1 gps. and Si-R gps. Modification may be carried out with (2) first and then (1). Pref. R1 = a hydrophilic gp. contg. OH; and R = 1-18C hydrocarbonyl.

Pref. after **coating** the support, the **hydrophobic** modification step is carried out followed by an intermediate modification step of bonding an intermediate gp. having a double bond and an epoxy gp. at the other end to at least a part of the remainder of the -SiH residues of the polymer. Hydrophilic modification step is then performed by reacting the intermediate epoxy gp., with a glycerol gp. to form -SiR1 gps.

USE/ADVANTAGE - Packing material can be used for packing a chromatographic column used in sepg. components of a liq. sample, pref. a protein-contg. sa

Dwg.0/25

FS CPI

FA AB; DCN

MC CPI: A06-A00E1; A10-E01; A12-L04; A12-W11L; B04-C03D; B11-B; D05-H09; J04-B01C

L54 ANSWER 26 OF 37 JAPIO COPYRIGHT 2003 JPO

AN 1992-013780 JAPIO

TI MODIFIED INORGANIC **POWDER** AND PRODUCTION THEREOF

IN NAKATSUKA TAKAO; HIRAO HIROHIKO; SOGABE SEIJI

PA SHIKOKU CHEM CORP

PI JP 04013780 A 19920117 Heisei

AI JP 1990-116288 (JP02116288 Heisei) 19900502

PRAI JP 1990-116288 19900502

SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1992

IC ICM C09C003-08

ICS C09C003-06

AB PURPOSE: To enable **hydrophobic** surface-treatment of inorganic

powder to impart high heat-resistance and obtain the subject **powder** effective in improving the dispersibility of fillers, etc., in a heat-resistant resin by adsorbing, spraying or mixing a precursor of a metal oxide **gel** containing an organic phosphonic acid compound to an inorganic **powder**.

CONSTITUTION: The objective **powder** having a surface **coating** layer composed of a complex of an organic phosphonic acid compound and a metal oxide **gel** is produced by adsorbing, spraying or mixing a precursor of a metal oxide **gel** (preferably aluminum oxide **gel**) containing an organic phosphonic acid compound (e.g. phenylphosphonic acid or octylphosphonic acid) to an inorganic **powder** (e.g. **silica gel** or calcium carbonate).

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L54 ANSWER 27 OF 37 HCAPLUS COPYRIGHT 2003 ACS
 AN 1991:431218 HCAPLUS
 DN 115:31218
 TI Crosslinking compositions for thermosetting epoxy resins
 IN Yasuda, Akira; Nagase, Rihei
 PA Somar Corp., Japan
 SO Eur. Pat. Appl., 21 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM C08G059-40
 ICS C08G059-18; C08G059-50
 CC 42-3 (**Coatings, Inks, and Related Products**)
 Section cross-reference(s): 37

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 421390	A2	19910410	EP 1990-118983	19901004
	EP 421390	A3	19920527		
	R: DE, FR, GB, NL				
	JP 03122114	A2	19910524	JP 1989-261818	19891006
	JP 05088886	B4	19931224		
	US 5218015	A	19930608	US 1990-592744	19901004
	CA 2026995	AA	19910407	CA 1990-2026995	19901005
PRAI	JP 1989-261818		19891006		

AB Storage-stable, **powd.** curing compns. with low H₂O absorption are prepd. by mixing molten curing agents with low reactivity, catalysts, and zeolites, cooling, and **powdering** in the presence of **hydrophobic** fine SiO₂, silane coupling agents, or siloxanes. A curing agent was prepd. by kneading a phenolic novolak 180, zeolite 13X 100, and Ph3P 20 parts at 130.degree. for 60 min, cooling, **powdering**, and adding **hydrophobic silica**. A **coating** compn. contg. bisphenol A epoxy resin 80.0, cresol novolak epoxy resin 20.0, and this curing agent (aged 2 wk at 30.degree. and 60% relative humidity) 30.3 parts had **gel** time at 150.degree. 63 s, and **gel** time retention after 2 and 5 wk at 40.degree. 90.0 and 80.4%, resp.; vs. 58.0, 70.5, and 60.0, resp., without SiO₂.

ST crosslinking agent storage stable; epoxy resin crosslinking agent; phenolic novolak crosslinker epoxy; zeolite crosslinker epoxy resin; catalyst crosslinking epoxy resin; triphenylphosphine catalyst crosslinking; **silica** stabilizer crosslinking compn

IT **Coating materials**
 (epoxy resins, storage-stable curing compns. for)

- IT Crosslinking catalysts
(for epoxy resins, in storage-stable curing compns.)
- IT Epoxy resins, uses and miscellaneous
RL: USES (Uses)
(**powd.** crosslinking compns. for, storage-stable)
- IT Siloxanes and Silicones, uses and miscellaneous
RL: USES (Uses)
(stabilizers, for crosslinking compns. for epoxy resins)
- IT Zeolites, uses and miscellaneous
RL: USES (Uses)
(13X, stabilizers, for crosslinking compns. for epoxy resins)
- IT Zeolites, uses and miscellaneous
RL: USES (Uses)
(5A, stabilizers, for crosslinking compns. for epoxy resins)
- IT Phenolic resins, uses and miscellaneous
RL: USES (Uses)
(novolak, in storage-stable curing compns. for epoxy resins)
- IT 90-72-2, 2,4,6-Tris(dimethylaminomethylphenol) 603-35-0,
Triphenylphosphine, uses and miscellaneous 616-47-7, 1-Methylimidazole
670-96-2, 2-Phenylimidazole 693-98-1, 2-Methylimidazole 829-85-6,
Diphenylphosphine 3743-22-4 6224-63-1, Tri-m-tolylphosphine
6674-22-2 7164-98-9, 1-Phenylimidazole 13750-62-4,
1-Benzyl-2-methylimidazole 38668-46-1
RL: CAT (Catalyst use); USES (Uses)
(catalysts, in storage-stable curing compns. for epoxy resins)
- IT 7631-86-9, **Silica**, uses and miscellaneous
RL: USES (Uses)
(**hydrophobic** and colloidal, stabilizers for crosslinking
compns. for epoxy resins)
- IT 919-30-2, 3-Aminopropyltriethoxysilane
RL: USES (Uses)
(stabilizers, for crosslinking compns. for epoxy resins)
- L54 ANSWER 28 OF 37 JAPIO COPYRIGHT 2003 JPO
AN 1991-218458 JAPIO
TI COLUMN PACKING MATERIAL AND ITS PRODUCTION
IN KANDA TAKETOSHI; SAKAMOTO ATSUO; OTA TADAO; OTSU YUTAKA
PA SHISEIDO CO LTD
PI JP 03218458 A 19910926 Heisei
AI JP 1990-83618 (JP02083618 Heisei) 19900330
PRAI JP 1989-257288 19891002
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991
IC ICM G01N030-48
ICS B01J020-26
- AB PURPOSE: To obtain the packing material which can be easily produced and
has high separability by modifying the surface of a porous carrier with a
hydrophobic group and a hydrophilic group.
CONSTITUTION: The particularly adequate porous carrier is obtd. by
subjecting a silicon compd. having Si-H groups to surface polymn. to a
silica gel of a spherical or crushed type having fine
pores of about 60 to 80 μ m; and about 400 to 600m²/g specific
surface area, then bringing the hydrocarbon having a vinyl group in the
molecule into reaction with the remaining Si-H groups and **coating**
the entire surface with the **hydrophobic** silicon compd. partially
having alkyl groups. Lewis acid is then acted on this carrier and the
alkyl groups in a part of the surface of the **powder** and
particularly the outside surface are cut to impart the **hydrophobic**
property to the surface. The column packing material obtd. in such a

manner is made into a resin capsule type consisting of the silicone resin uniformly **coating** the carrier and hardly receives the influence of the polar properties possessed by the individual **powder particles**. Since at least a part of the outside surfaces of the packing material are hydrophilic and do not adsorb protein, etc., the packing material is stable and has the excellent separability.
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L54 ANSWER 29 OF 37 WPIX (C) 2003 THOMSON DERWENT
AN 1990-374779 [50] WPIX
CR 1989-206054 [28]; 1990-090374 [12]
DNC C1990-163312
TI Stable combined peroxide-bi carbonate non-aq. dentifrice - contg. peroxide stabiliser (e.g. colloidal **silica** or oleophilic **coating**) and opt. **hydrophobic** vehicle, pref. polyethylene glycol.
DC A96 D21
IN DEMHOLTZ, J R; DEMHOLTZ, M; RUDY, J B
PA (PERO-N) PEROXYDENT GROUP
CYC 1
PI US 4971782 A 19901120 (199050)*
ADT US 4971782 A US 1985-721210 19850409
PRAI US 1983-532182 19830914; US 1985-721210 19850409; US 1987-2177 19870112
IC A61K007-20; A61K033-40
AB US 4971782 A UPAB: 19950412
Non-aq. combined peroxide/bicarbonate toothpastes, **gels**, **powders**, granules, flakes or tablets are claimed in which the peroxide and bicarbonate are stabilised, the peroxide releasing oxygen in the mouth under the influence of water and the bicarbonate providing a neutral or basic pH in contacting water. The compsns. comprise (a) one or more of urea peroxide, H₂O₂, Mg-, Ca- or Li-peroxide, Na percarbonate or NH₄ persulphate; (b) a bicarbonate salt; (c) a peroxide stabiliser which is desiccating- or sequestering agent, colloidal particles (pref. of pyrogenic **silica**), a free radical preventative, an inorg. hardness salt, an acidulating agent or a coating or (a) and/or (b), this coating dissolving, dispersing or emulsifying in water; etc.
ADVANTAGE - Peroxides and bicarbonates can be used together in a single, stable non-aq. compsn. @ (15pp Dwg.No.0/0)
0/0
FS CPI
FA AB
MC CPI: A12-V04B; D08-B08

L54 ANSWER 30 OF 37 JICST-EPlus COPYRIGHT 2003 JST
AN 880335746 JICST-EPlus
TI Preconcentration and X-ray fluorescence spectrometric determination of a trace of gold(III), platinum(IV) and palladium(II) by the adsorption onto poly(methyl methacrylate)-coated **silica gel particles** loaded with trioctylamine.
AU MATSUNAGA HIDEYUKI; ITABASHI OSAMU
CS Gov. Industrial Res. Inst., Tohoku
SO Tohoku Kogyo Gijutsu Shikenjo Hokoku (Reports of the Government Industrial Research Institute, Tohoku), (1988) no. 21, pp. 19-24. Journal Code: Z0062A (Fig. 8, Tbl. 1, Ref. 5)
ISSN: 0389-939X
CY Japan
DT Journal; Article
LA Japanese

STA New

AB A new adsorbent was developed for the simultaneous determination of gold(III), platinum(IV) and palladium(II) by the X-ray fluorescence spectrometry. **Silica gel particles** were coated with poly(methyl methacrylate) (PMMA) to be converted to partially **hydrophobic** materials, which were successively treated with triocylamine. The adsorption characteristics of the prepared **particles** have been studied. The present **particles** were found to reveal adsorption characteristics similar to those of the commercial anion-exchange resins. The distribution coefficients of the adsorbent for gold(III), platinum(IV) and palladium(II) were determined to be 104.4, 103.4 and 102.9, respectively, at .cents.HCl!=1mol/dm3. The optimal adsorbent for the concentration of these three noble metal ions was obtained when the content of PMMA was ranged from 7 to 10wt%, and the amount of triocylamine for the treatment was 0.5mmol/g-adsorbent. A trace of those three metal ions, down to 0.1ppm, can be readily adsorbed onto this adsorbent from 1mol/dm3 hydrochloric acid solutions and successfully determined by the X-ray fluorescence spectrometry. (author abst.)

CC CC03014E (543.4/.51+)

CT **silica gel**; **coating** material(cover); aliphatic amine; polymethyl methacrylate; gold; platinum; palladium; simultaneous analysis; X-ray fluorescence analysis; adsorbent; sample preparation; pressure forming; quantitative analysis(analytical chemistry); trace analysis; trace constituent; preconcentration; amine

BT **gel**; material; polyalkyl methacrylate; polymethacrylate; acrylic resin; polymer; thermoplastic; plastic; 1B group element; transition metal; metallic element; element; platinum group metal; analysis(separation); analysis; X-ray spectrometry; X-ray analysis; instrumental analysis; spectrochemical analysis; preparation(material); forming and molding; minor component; component; concentration(enrichment); separation

L54 ANSWER 31 OF 37 WPIX (C) 2003 THOMSON DERWENT

AN 1986-090833 [14] WPIX

DNC C1986-038636

TI **Hydrophobic** fine oxide **powder** - used for imparting viscosity and thixotropy to unsatd. polyester resin and epoxy resin.

DC A28 A60 G01 G02 G03

PA (MITU) MITSUBISHI CHEM IND LTD

CYC 1

PI JP 61036338 A 19860221 (198614)* 5p

PRAI JP 1984-157041 19840727

IC C01B033-12; C08K003-22; **C09D007-12**

AB JP 61036338 A UPAB: 19930922

Hydrophobic fine oxide **powder** has ave. **particle** size below 100nm and specific surface area at least 50 m2/g and critical concn. of methanol which is not wetted by wetting test with water-methanol mixt. above 60 vol.%.

Hydrophobic inorganic oxide is **silica**, titania, zirconia, alumina, etc. **Hydrophobic** inorganic **powder** is produced by **hydrophobising** fine metal **powder** prepd. by vapour phase oxidn. or hydrolysis of Si-tetrachloride, Zr-tetrachloride, etc. **Hydrophobising** agent is hexamethyldisilazane, cyclic silazane mixt., etc. Amt. is 2-100 wt.% per oxide **powder**, depending on specific surface area of **powder**. **Hydrophobising** method is to evaporate silazane cpd. and treat in vapour phase at higher than b.pt. and lower than 350 deg.C. Reaction time is 15 min.-4 hrs.

USE/ADVANTAGE - Prod. is suitable to give viscosity and thixotropicity to unsatd. polyester resin and epoxy resin in application of hand-lay-up, spray-up, filament winding or **gel coating**. Prod. is good as modifier for paint, ink, adhesive, synthetic rubber, etc.

0/0

FS CPI
FA AB
MC CPI: A08-M06; G02-A03; G02-A04A; G03-B02

L54 ANSWER 32 OF 37 HCAPLUS COPYRIGHT 2003 ACS

AN 1982:425241 HCAPLUS

DN 97:25241

TI Epoxy **coating powders**

IN Housenick, Jeffery B.; Richart, Douglas S.

PA Polymer Corp., USA

SO PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DT Patent

LA English

IC C08L063-04

CC 42-9 (**Coatings**, Inks, and Related Products)

Section cross-reference(s): 51

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8200651	A1	19820304	WO 1980-US1090	19800822
	W: AU, BR, JP, SU, US				
	RW: AT, CH, DE, FR, GB, LU, NL, SE				
	AU 8167807	A1	19820317	AU 1981-67807	19800822
	JP 57501380	T2	19820805	JP 1981-500761	19800822
	EP 58149	A1	19820825	EP 1981-900465	19800822
	R: AT, CH, DE, FR, GB, LU, NL, SE				
PRAI	WO 1980-US1090		19800822		

AB **Anticorrosive epoxy powder coatings** are described contg. unmodified epoxy resins with av. functionality >3, an arom. polyfunctional amine curing agent, a fine filler .gtoreq.50 parts/100 resin parts, and a BC13 catalyst. The **coatings** are applied by fusion, and are esp. suitable for protecting oil field drill pipes and other gears. Thus, a **coating** was made contg. a cresol novolac epoxy resin ECN 1299 with functionality 5.4 75, Araldite 6084 (bisphenol A-epichlorohydrin copolymer) with functionality 2 25, Eporal (diaminodiphenyl sulfone) curing agent 20, XU-213 (BC13-amine complex) catalyst 1, a filler 125, pigments 30, and Tullanox 500 (**hydrophobic silica aerogel**) 1 part/100 resin parts. The **coating** had **gel** time 60 s at 205.degree., inclined plate flow .apprx.85 mm at 150.degree., and 24-h stability in drilling muds at pressure 2800 psi and 300 F superior to the industry requirements.

ST **powder epoxy anticorrosive coating;**
petroleum drilling pipe epoxy **coating**

IT Petroleum wells
(drilling of, pipes for, **anticorrosive epoxy powder coatings** for)

IT Drilling fluids and muds
(epoxy **powder coatings** resistant to)

IT **Coating materials**
(**anticorrosive, powder, epoxy**, for petroleum well drilling pipes)

IT Chemically resistant materials
(**coatings, epoxy powder**, for petroleum well
drilling pipes)

IT Pipes and Tubes
(drilling, for petroleum well, **anticorrosive epoxy
powder coatings** for)

IT 25068-38-6 37348-54-2
RL: USES (Uses)
(**anticorrosive powder coatings** contg.,
for petroleum well drilling pipes)

IT 80-08-0
RL: USES (Uses)
(curing agents, **anticorrosive epoxy powder
coatings** contg.)

IT 51033-25-1
RL: USES (Uses)
(curing agents, for **anticorrosive epoxy powder
coatings**)

IT 37226-51-0D, amine complexes 73201-90-8
RL: CAT (Catalyst use); USES (Uses)
(curing catalysts, **anticorrosive epoxy powder
coatings** contg.)

IT 63800-27-1
RL: USES (Uses)
(**hydrophobic aerogels, anticorrosive epoxy
powder coatings** contg.)

L54 ANSWER 33 OF 37 HCAPLUS COPYRIGHT 2003 ACS
AN 1983:55755 HCAPLUS
DN 98:55755
TI **Hydrophobic coating** of billets
IN Mlot-Fijalkowski, Adolf; Borrows, Kenneth P.
PA Magnaflux Corp., USA
SO Can., 9 pp.
CODEN: CAXXA4
DT Patent
LA English
IC G01N021-64
CC 42-10 (**Coatings, Inks, and Related Products**)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 1134167	A1	19821026	CA 1980-357070	19800725
PRAI	US 1980-129710		19800312		

AB A **hydrophobic** background **coating** is provided for steel
billets for nondestructive detection of flaws by deposition of fluorescent
magnetic **particles** from an aq. suspension, the
hydrophobic coating shedding the water and leaving the
particles which are attracted to flaws. Thus, Degussa D17
silica gel hydrophobic powder was
electrostatically sprayed several times onto a steel billet to form a
uniform white **coating**. A suspension of fluorescent magnetic
particles (1/5 oz/gal) in water was poured over the area, and flaw
indications appeared while the water drained off.

ST nondestructive testing **hydrophobic coating**;
silica gel coating testing; steel flaw
detection **coating**

IT **Silica gel**, uses and miscellaneous

RL: USES (Uses)
 (powder coating, for flaw detection testing of steel billets)

IT Coating materials
 (hydrophobic, powder, primers, silica, silica gel or titanium dioxide, for flaw detection testing of steel billets)

IT Testing of materials
 (nondestructive, by fluorescent-magnetic method, hydrophobic primers for)

IT 7631-86-9, uses and miscellaneous 13463-67-7, uses and miscellaneous
 RL: USES (Uses)
 (powder coating, for flaw detection testing of steel billets)

L54 ANSWER 34 OF 37 RAPRA COPYRIGHT 2003 RAPRA
 AN R:271951 RAPRA FS Rapra Abstracts; Adhesives Abstracts
 TI **HYDROPHOBIC AEROSIL - MANUFACTURE, PROPERTIES AND APPLICATIONS.**
 CS DEGUSSA AG, GESCHAEFTSBEREICH PIGMENTE
 SO Frankfurt, 1981, pp.16. 10ins. 20/3/85. Technical Bulletin Pigments No.6. 51SS
 PY 1981
 DT Company Publication
 LA English
 AB This brochure deals with the **hydrophobic** grade of Aerosil which is a very pure form of **silicon dioxide** aerosol obtained by flame hydrolysis. Details are given of the processing, analytical data, properties and applications of Aerosil R 972. Further information is given on the physiological behaviour, physico-chemical data and safety of this material.

CC 51SS
 SC *MB
 CT AEROSOL; APPLICATION; CHEMICAL COMPOSITION; MOLECULAR STRUCTURE; **COATING**; COMPANY; COMPANIES; COSMETICS; DENSITY; FILLER; **GEL**; GREASE; HYDROLYSIS; **HYDROPHILIC**; **HYDROPHOBIC**; JOINT; LACQUER; PAINT; LATEX; MOISTURE ABSORPTION; ODOUR; **PARTICLE SIZE**; PHYSICAL PROPERTIES; **POWDER**; PRINTING INK; INK; PROCESSING; PROPERTIES; PU; POLYURETHANE; ROOM TEMPERATURE CURE; ROOM TEMPERATURE CURING; SAFETY; SEALANT; SILICONE RUBBER; SILICON ELASTOMER; TEST; TESTING; THICKENING AGENT; TOXICITY; VISCOSITY; VULCANISATION; ODOR; VULCANIZATION

NPT DIMETHYLDICHLOROSILANE; **SILICA**; **SILICON DIOXIDE**; **SILICA**

SHR FILLERS OF, **silicon dioxide**
 GT WEST GERMANY
 TN AEROSIL R 972

L54 ANSWER 35 OF 37 HCAPLUS COPYRIGHT 2003 ACS
 AN 1963:4002 HCAPLUS
 DN 58:4002
 OREF 58:672d-h, 673a
 TI Multicolor **coating** compositions
 IN Petty, John L.
 PA Sherwin-Williams Co.
 SO 10 pp.
 DT Patent
 LA Unavailable

NCL 260017000

CC 52 (Coatings, Inks, and Related Products)

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3058931		19621016	US	

PI US 3058931

19621016

US

AB A paint latex emulsion is normally pigmented. Dispersed in visibly discrete macroscopic **particles** in the latex paint carrier is another liquid phase that is immiscible with the emulsion paint system. The macroscopic phase is of a different color than the pigmented latex emulsion paint. Upon application, a base coat of one color is obtained interspersed with **particles** of another color. Thus, 912 parts by wt. bisphenol and 465 parts of epichlorohydrin were heated to 150-60.degree.F. and 1600 parts 20% aq. NaOH was added slowly at const. temp. The temp. was held at 150-60.degree.F. for 1 hr. after all the NaOH soln. had been added. The resinous mass was sepd. from the aq. phase, washed until salt-free, and the occluded H2O present in the resin was distd. The hydrophilic no. (HN) of the resin solids was 110. Approx. 60 parts of the resin was heated to 480.degree.F. with 400 parts dehydrated castor oil fatty acids and held to an acid value of 1-2. The resulting ester was cut to 50% solids with a high-boiling naphtha having a Kauri-butanol value of >90. The HN requirement of the solids was 51. Approx. 450 parts by wt. of the ester was mixed with CaCO3-SiO2 pigment (Lorite) 250, molybdate orange 20, diatomaceous earth 100, 4% Pb drier, 2.25, 6% Co drier 0.375, and 6% Mn drier 0.375 part. The paste was ground in a 3-roll mill and thinned by adding 100 parts ester and 108 parts high-flash naphtha (Kauri-butanol value 90). This formed a viscous **hydrophobic** pigmented varnish of orange base (I). A similar blue base (II) was obtained by substituting 5 parts of phthalocyanine blue for the 20 parts of molybdate orange. The following ingredients were mixed: H2O 225, TiO2 200, black Fe oxide 2, and Lorite 25 parts. The mixt. was heated to 150.degree.F. and 6 parts high-gel Me cellulose (4000 cp.) was added and the batch mixed 10-15 min. Then, 225 parts ice water was added and the mixt. cooled to room temp. or lower, after which 5 parts sulfonated tallow, 2 parts Na o-phenyl phenate, 235 parts 45% emulsion copolymer solids latex of styrene and butadiene, and 2 parts Co drier were added. To 250 parts by wt. of this base, 75 parts I and sep. and later 25 parts II were added. Macroscopic **particles** of these colors were suspended in visible globules in the emulsion base. Spraying gave a gray base coat with a superimposed spatter coat of visibly large **particles** of orange and blue paste. In other examples, the black Fe oxide was replaced with phthalocyanine green and ferrite yellow to give a light-green base, and the styrene-butadiene latex emulsion was replaced with a poly(vinyl acetate) emulsion. U.S. 3,058,932; 11 pp. The 2nd dispersed phase in the multicolor oil-in-H2O emulsion consists of macroscopic discrete **particles** of an org., liquid varnish having a H2O-insol., thixotropic, non-volatile component obtained by heating a polyamide resin of mol. wt. 3000-9000 and a vehicle selected from the group consisting of glyceride oils, oil-modified alkyd resins, and varnish ester bodies, above the m.p. of the polyamide resin but <600.degree.F., until a 1-part sample mixed with 9 parts of mineral spirits, when cooled to room temp., had no graininess and max. turbidity.

IT Epoxy resins

(emulsions of controlled-hydrophilic-no., and dispersion and mixing with microdispersed and macroscopic pigments)

IT Coating(s)

(from macroscopically dispersed interpolymers, multicolor latex)

IT Paint

(multicolor, from macroscopically dispersed interpolymers and

particles of colors in latex)

IT Amides
 (poly-, as binders, multicolor **coatings** contg.)

IT Cyclohexanesulfonic acid, 1-hydroxy-, ammonium salt

IT 106303-89-3, 1-Octadecanesulfonic acid, 1-hydroxy-, ammonium salt
 (prepn. of)

L54 ANSWER 36 OF 37 NTIS COPYRIGHT 2003 NTIS
 AN 1998(18):02414 NTIS Order Number: AD-A338 335/3/XAB
 TI Third UK Colloid and Surface Science Student Meeting. Conference
 proceedings.
 CS Hull Univ. (England). (012380000 172750)
 NR AD-A338 335/3/XAB; EOARD-CSP 95-1019
 137p; 1995
 NC Contract(s): F61708-95-W-0178
 DT Conference
 CY United Kingdom
 LA English
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OS GRA&I9813

AB Partial contents: Stabilisation of protein adsorbed layers in foams and
 emulsions by crosslinking; Surfactant stabilised gas microcells;
 Colloidal gas aphrons (CGAs) as a potential technique for protein
 recovery; The attachment of **hydrophobic particles**
 onto rising air bubbles within the context of antifoaming systems; NMR
 studies of transfer rates in emulsions; Creaming of oil in water
 emulsions; Novel monodisperse 'silicone oil'/water emulsions;
 Microemulsion based **gels** for transdermal drug delivery;
 Adsorption of polyelectrolytes and surfactants from solution and their
 competitive behaviour; Adsorption studies on mixed **silica**,
 polymer, surfactant systems; Hydrodynamic erosion of surface
coatings; Particle removal and deposition at
 three-phase contact lines; Study of surface forces of an adsorbed PEO
 layer using a **silica particle** probe SFM; Recent
 advances in the study of dissolution kinetics using the scanning
 electrochemical microscope.

CC 99F Physical and theoretical chemistry

CT *Surface analysis; *Colloids; Scanning; Probes; Recovery; Nuclear
 magnetic resonance; Meetings; Air; Layers; **Silicon dioxide**;
 Water; Adsorption; Polyelectrolytes; Polymers; Proteins; Surface
 finishing; Electrochemistry; Gases; **Coatings**; Deposition;
 Erosion; Crosslinking(Chemistry); **Particles**; Bubbles; Surface
 active substances; Mixing; Oils; Microscopes; **Gels**;
 Hydrodynamics; **Hydrophobic properties**; Foam; Emulsions;
 Foaming inhibitors; United Kingdom
 FOREIGN REPORTS; MICROCELLS; CGAS(COLLOIDAL GAS APHRONS); CREAMING;
 MONODISPERSE; TRANSDERMAL DRUG DELIVERY; SFM(SCANNING FORCE MICROSCOPY)

L54 ANSWER 37 OF 37 NTIS COPYRIGHT 2003 NTIS
 AN 2003(13):00233 NTIS Order Number: ADA410399/XAB
 TI Polyhedral Oligomeric Silsesquioxanes Surfactants. Technical paper.
 AU Viers, B. D.; Esker, A.; Farmer, K.
 CS Engineering Research and Consulting, Inc., Edwards AFB, CA. (117235000
 437859)

NR ADA410399/XAB; AFRL-PR-ED-TP-2001-029
3p; 2001

NC Project(s): 2303
Task(s): M1A3

DT Report

CY United States

LA English

NTE Prepared in cooperation with Department of Chemistry, Virginia Tech,
Blacksburg, VA. Pres: American Chemical Society, San Diego, CA, 1-5 Apr
2001.


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located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A01/MF A01

OS GRA&I0313

AB There has been recent interest in using polyhedral oligomeric
silsesquioxanes (POSS) as the smallest **particles** of
silica for reinforcement of polymers. These materials are
monodisperse, have tailored functionality (including a
hydrophobic coating) and should thus act as model
nanoparticulate filler. Feher et al have shown that sol-gel
condensation into cage compounds can yield two thermodynamically stable
main isolates: a fully condensed R8T8 cube and an incompletely condensed
R7T4D3(OH)3 trisilanol. (T refers to a SiO₃/2 and D is a SiO₂
/2 moiety in a silicate framework) There are large differences in the
solubility of POSS in common organic solvents based on the substitution
of the cages. For example, a fully condensed iBu8T8 cube is more soluble
than a similar cyclohexyl Cy8T8 cube which in turn is more soluble than
a cyclopentyl Cp8T8 substituted cube. Furthermore the breaking of
symmetry in the incompletely condensed cubes could also be expected to
enhance solubility/compatibility. The dispersion of POSS will likely
determine how well the material can act as a 'nanofiller.' Farmer et.
al. have recently performed molecular dynamics simulations which suggest
that POSS molecules have no tendency for aggregation in a polymeric
matrix if they are originally well dispersed.

CC 99D Basic and synthetic chemistry
99C Polymer chemistry

CT *Polymers; Synthesis(Chemistry); Silicates
*POSS(POLYHEDRAL OLIGOMERIC SILSESQUIOXANES); TRISILANOLS;
NANOPARTICULATE FILLER; IBU8T8 CUBE; CY8T8 CUBE; CP8T8 CUBE; POLYMERIC
MATRIX



L1 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

RN 78-10-4 REGISTRY

CN Silicic acid (H₄SiO₄), tetraethyl ester (8CI, 9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Ethyl silicate ((EtO)₄Si) (6CI)

OTHER NAMES:

CN Colcoat 6P

CN Conservare OH

CN Dynasil A

CN ES 100

CN ES 100 (silicate)

CN ES 140

CN ES 28

CN ES 28 (ester)

CN ES 45

CN Ethyl orthosilicate

CN Ethyl silicate 28

CN Ethyl Silicate 45

CN KBE 04

CN LS 2340

CN LS 2430

CN SI 42

CN Silane, tetraethoxy-

CN Silicon ethoxide

CN Silicon ethoxide (Si(OEt)₄)

CN Silicon tetraethoxide

CN Silicon tetraethoxide (Si(OC₂H₅)₄)

CN Silicon tetraethoxide (Si(OEt)₄)

CN Silikan L

CN Steinfestiger OH

CN T 1807

CN **TEOS**

CN TES 28

CN Tetraethoxysilane

CN Tetraethoxysilicon

CN Tetraethoxysilicon(IV)

CN Tetraethyl orthosilicate

CN Tetraethyl silicate

CN TSL 8124

FS 3D CONCORD

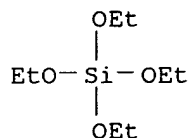
MF C8 H20 O4 Si

CI COM

LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DETHERM*, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

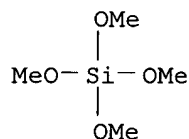


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

14746 REFERENCES IN FILE CA (1962 TO DATE)
1033 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
14761 REFERENCES IN FILE CAPLUS (1962 TO DATE)
216 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>

L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS
 RN 681-84-5 REGISTRY
 CN Silicic acid (H4SiO4), tetramethyl ester (8CI, 9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Methyl silicate ((MeO)4Si) (6CI)
 OTHER NAMES:
 CN CLG 520
 CN Dynasil M
 CN KBM 04
 CN LS 540
 CN Methyl orthosilicate
 CN Methyl silicate
 CN Methyl silicate ((CH3)4SiO4)
 CN Methyl Silicate 28
 CN Methyl Silicate 39
 CN MSP 150
 CN Silane, tetramethoxy-
 CN Silicon methoxide (Si(OMe)4)
 CN Silicon tetramethoxide
 CN Siluplex
 CN SIT 7510.0
 CN T 1980
 CN Tetramethoxysilane
 CN Tetramethyl orthosilicate
 CN Tetramethyl silicate
 CN **TMOS**
 CN TSL 8114
 FS 3D CONCORD
 DR 12547-31-8
 MF C4 H12 O4 Si
 CI COM
 LC STN Files: AGRICOLA, BEILSTEIN*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS,
 CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB,
 DETHERM*, GMELIN*, HODOC*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE,
 MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, TOXCENTER, ULIDAT,
 USPAT2, USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

3782 REFERENCES IN FILE CA (1962 TO DATE)
 277 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 3791 REFERENCES IN FILE CAPLUS (1962 TO DATE)
 98 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=>

L9 ANSWER 1 OF 30 CAPLUS COPYRIGHT 2003 ACS
 AN 2000:227411 CAPLUS
 DN 132:257985
 TI **Hydrophobic thin films** on magnesium fluoride surfaces
 IN Singh, Brij P.; Arora, Pramod K.
 PA Nanofilm, Ltd., USA
 SO Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM G02B001-10
 ICS G02B001-11; C03C017-42
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
 Section cross-reference(s): 42

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 990925	A1	20000405	EP 1999-307716	19990930
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6143358	A	20001107	US 1998-164489	19981001
	US 6472073	B1	20021029	US 2000-614448	20000712
PRAI	US 1998-164489	A	19981001		
OS	MARPAT 132:257985				

AB Magnesium fluoride surfaces are described to which are bonded a thin film of a metal oxide (e.g., SiO₂) having a surface that is hydrolyzed in the presence of airborne moisture to form hydroxy groups, and a **hydrophobic thin film** of amphiphilic mols. bonded to the film of metal oxide. In **particular**, the magnesium fluoride surfaces may be those of antireflection films formed on lenses. Methods of applying a film of amphiphilic mols. to the surface of a substrate that is inadequately reactable with amphiphilic mols. to bond a thin film of amphiphilic mols. thereto are described which entail applying to the surface a metal oxo-acid soln. that is condensable to a metal oxide film whose surface hydrolyzes in the presence of airborne moisture to form hydroxy groups; heating the substrate to condense the metal oxo-acid to a metal oxide film; cooling the substrate; exposing the metal oxide film to airborne moisture to hydrolyze the surface of the metal oxide and form hydroxy groups thereon; applying to the metal oxide film a material that contains amphiphilic mols. that react with hydroxy groups; and allowing the amphiphilic mols. to bond to the metal oxide film by reacting with the hydroxy groups on the metal oxide film and to self-assemble into a substantially continuous film. The substrate may be selected from magnesium fluoride, aluminum, copper, brass, nickel, cobalt, or stainless steel.

ST antireflection **coating** amphiphile **hydrophobic** thin film; lens **coating** amphiphile **hydrophobic** thin film

IT Amphiphiles
 Antireflective films
 Coating process
 Lenses

(amphiphile-based **hydrophobic** thin film prodn. on substrates and magnesium fluoride surfaces with the films)

IT Coating materials
 (water-resistant; amphiphile-based **hydrophobic** thin film prodn. on substrates and magnesium fluoride surfaces with the films)

IT 7440-32-6D, Titanium, compds., uses 7631-86-9, Silicon dioxide, uses

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(amphiphile-based **hydrophobic** thin film prodn. on substrates and magnesium fluoride surfaces with the films)
IT 7429-90-5D, Aluminum, compds., uses 7440-21-3D, Silicon, compds., uses 7440-47-3D, Chromium, compds., uses 7440-58-6D, Hafnium, compds., uses 7440-67-7D, Zirconium, compds., uses

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(amphiphile-based **hydrophobic** thin film prodn. on substrates and magnesium fluoride surfaces with the films)
IT 78-10-4, Tetraethylorthosilicate 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7783-40-6, Magnesium fluoride 12597-68-1, Stainless steel, uses 12597-71-6, Brass, uses

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(amphiphile-based **hydrophobic** thin film prodn. on substrates of)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Kogo, E; US 5783299 A 1998 CAPLUS
- (2) Nanofilm Corp; EP 0844028 A 1998
- (3) Richter, H; US 4410563 A 1983 CAPLUS
- (4) Singh, B; US 5219654 A 1993 CAPLUS
- (5) Takashi, T; US 4765729 A 1988

RN 7440-32-6D
RN 7631-86-9
RN 7429-90-5D
RN 7440-21-3D
RN 7440-47-3D
RN 7440-58-6D
RN 7440-67-7D
RN 78-10-4
RN 7429-90-5
RN 7440-02-0
RN 7440-48-4
RN 7440-50-8
RN 7783-40-6
RN 12597-68-1
RN 12597-71-6

L9 ANSWER 2 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2001:731248 CAPLUS

DN 135:295966

TI Polymeric organic coatings and method of manufacture thereof

IN Barton, Carlos L.; Seery, Thomas A. P.; Gao, Hanrong; Jacob, Jayanthi

PA World Properties, Inc., USA

SO PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM H05B033-04

ICS C09K011-02; C09C003-10

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 42, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----		-----	-----	-----
PI	WO 2001074119	A1	20011004	WO 2001-US8911	20010320
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				

CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM,
 HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS,
 LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO,
 RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

GB 2377819 A1 20030122 GB 2002-22645 20010320
 US 2001038925 A1 20011108 US 2001-813641 20010321
 PRAI US 2000-192126P P 20000324
 WO 2001-US8911 W 20010320

- AB Electroluminescent lamp are described in which a component (e.g., an electrode or phosphor **particle**) of the lamp has a **hydrophobic**, polymeric org. **coating**, comprising a tethering **layer** on the exterior of each electroluminescent device component and a **hydrophobic** org. polymer **coating** covalently bound to the tethering **layer** or, alternately, a **hydrophobic** org. polymer **coating** covalently bound to an oxide (e.g., SiO₂) disposed on an outer surface of the component. Methods of making a **hydrophobic**, org. polymeric **coating** on a component for an electroluminescent device are described which entail forming a tethering layer of small mols. on an outer layer of the component, wherein the tethering layer has a plurality of initiator groups external to the tethering layer surface; and polymg. hydrocarbon monomers from the initiator groups to form a **hydrophobic**, org. polymeric **coating** attached to the tethering **layer**. Methods of making a **hydrophobic**, org. polymeric **coating** on a component for an electroluminescent device are also described which entail attaching a plurality of initiator groups external to a surface of the component; and polymg. hydrocarbon monomers from the initiator groups to form a **hydrophobic**, org. polymeric **coating** attached to the tethering **layer**.
- ST electroluminescent device polymeric org coating; phosphor polymeric org coating electroluminescent device; electrode polymeric org coating electroluminescent device
- IT Coating process
 Electric contacts
 Electrodes
 Electroluminescent devices
 Phosphors
 (electroluminescent devices provided with components with polymeric org. coatings and their prodn. using surface-bound compds.)
- IT **Coating materials**
 (**hydrophobic**; electroluminescent devices provided with components with polymeric org. **coatings** and their prodn. using surface-bound compds.)
- IT 172222-30-9D, Benzylidenebis(tricyclohexylphosphine)ruthenium dichloride, reaction products with surface-bound mercapto compds.
 RL: CAT (Catalyst use); USES (Uses)
 (electroluminescent devices provided with components with polymeric org. coatings and their prodn. using surface-bound compds.)
- IT **78-10-4D**, Tetraethoxysilane, reaction products 1633-78-9D, 6-Mercaptohexan-1-ol, reaction products with catalysts 4420-74-0D, 3-Mercaptopropyltrimethoxysilane, reaction products with catalysts 73768-94-2D, 11-Mercaptoundecan-1-ol, reaction products with catalysts 364329-22-6D, 9-Decene-1-thiol, reaction products with catalysts
 RL: DEV (Device component use); USES (Uses)
 (electroluminescent devices provided with components with polymeric org. coatings and their prodn. using surface-bound compds.)
- IT 25038-76-0DP, Polynorbornene, reaction products with surface-bound mercapto compds.

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(electroluminescent devices provided with components with polymeric org. coatings and their prodn. using surface-bound compds.)

IT 1303-00-0, Gallium arsenide, uses 1306-23-6, Cadmium sulfide, uses 1314-96-1, Strontium sulfide 1314-98-3, Zinc sulfide, uses 1315-09-9, Zinc selenide 7631-86-9D, Silica, reaction products with hydrophobic org. polymers, uses 50926-11-9, Indium tin oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(electroluminescent devices provided with components with polymeric org. coatings and their prodn. using surface-bound compds.)

IT 498-66-8, Norbornene 707-80-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(electroluminescent devices provided with components with polymeric org. coatings and their prodn. using surface-bound compds.)

IT 707-80-2DP, reaction products with surface-bound mercapto compds. 18245-94-8DP, reaction products with hydroxysilanes
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(electroluminescent devices provided with components with polymeric org. coatings and their prodn. using surface-bound compds.)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Gen Electric Co Plc; WO 0005313 A 2000 CAPLUS
(2) Toyoda, M; US 4902929 A 1990

RN 172222-30-9D
RN 78-10-4D
RN 1633-78-9D
RN 4420-74-0D
RN 73768-94-2D
RN 364329-22-6D
RN 25038-76-0DP
RN 1303-00-0
RN 1306-23-6
RN 1314-96-1
RN 1314-98-3
RN 1315-09-9
RN 7631-86-9D
RN 50926-11-9
RN 498-66-8
RN 707-80-2
RN 707-80-2DP
RN 18245-94-8DP

L9 ANSWER 3 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 2000:441714 CAPLUS
DN 133:78012
TI Antiacid and antifouling **coating** of glass or plastic with functional meso-porous **hydrophobic film**.

IN Jacquiod, Catherine; Berquier, Jean-Marc; Teyssedre, Laurent; Azzopardi, Marie-Jose
PA Saint-Gobain Vitrage, Fr.
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2
DT Patent
LA French
IC ICM C03C017-00
ICS C09K003-18
CC 57-4 (Ceramics)
Section cross-reference(s): 38
FAN.CNT 1

gel

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000037374	A1	20000629	WO 1999-FR3167	19991216
	W: JP, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	FR 2787350	A1	20000623	FR 1998-16115	19981221
	FR 2787350	B1	20020104		
	EP 1144327	A1	20011017	EP 1999-961094	19991216
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	JP 2002533233	T2	20021008	JP 2000-589454	19991216
	US 2002034627	A1	20020321	US 2001-884936	20010621
PRAI	FR 1998-16115	A	19981221		
	WO 1999-FR3167	W	19991216		

AB A glass or plastic substrate coated with a meso-porous film (av. pore diam. .apprx.3 nm), characterized in that the chem., in **particular hydrophobic/oil-repellent**, mols. are bound to the meso-porous **film**. The substrate is treated preliminary in .gtoreq.1 aq. soln. contg. .gtoreq.1 compd. selected from Si, W, Sb, Ti, Zr, Ta, V, Pb, Mg, Al, Mn, Co, Ni, Sn, Zn, and/or In, e.g., a mixt. of 60 mL aq. soln. Al(NO3)3 and 150 mL KNO3 with 10-2 M soln. of KOH. The method for making such a substrate based on sol-gel technol. which consists of (1) contacting the substrate with a compn. contg. org. functional groups and a precursor of the meso-porous material, e.g., tetraethoxysilane, (2) pptg. the precursor around the functional groups and polymerases, and then (3) the functional groups are eliminated. The chem. mols., such as **hydrophobic/oil-repellent** mols. are then contacted with the meso-porous **film**. The invention further concerns a glazing for building or transportation vehicles comprising such a substrate.

ST glass plastic mesoporous **hydrophobic coating** sol gel;
antiacids antifouling coating film glass plastic

IT **Coating materials**
(antifouling, meso-porous **hydrophobic film**;
coating glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT Silicate glasses
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(calcium sodium silicate, **coating** of; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT Plastics, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(**coating** of; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT Sol-gel processing
(**coating**, meso-porous **hydrophobic film** deposition; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT Antacids
(**coating**; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT **Hydrophobicity**
(film with; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT Porous materials
(meso-porous **hydrophobic film**; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT Oilproofing agents

(silicones; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT **Coating process**
(sol-gel, meso-porous **hydrophobic film** deposition;
coating glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT 1310-58-3, Potassium hydroxide, uses 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7439-96-5, Manganese, uses 7440-02-0, Nickel, uses 7440-21-3, Silicon, uses 7440-25-7, Tantalum, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-36-0, Antimony, uses 7440-48-4, Cobalt, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses 7440-74-6, Indium, uses 7757-79-1, Nitric acid potassium salt, uses 13473-90-0
RL: MOA (Modifier or additive use); USES (Uses)
(aq. soln. contg.; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT 1609-19-4, Diethylchlorosilane 9016-00-6D, Polydimethylsiloxane, terminal divinyl derivs.
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**coating** process with; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

IT 57-09-0, Cetyltrimethylammonium bromide **78-10-4**
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(precursor of meso-porous **coating**; **coating** glass or plastic with meso-porous **hydrophobic film** using sol-gel technol.)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Feng, X; SCIENCE 1997, V276(5314), P923 CAPLUS
- (2) Gojon, C; SENSORS AND ACTUATORS B 1997, V38(1-3), P154
- (3) Guizard, C; US 5112676 A 1992 CAPLUS
- (4) Kim, A; US 5645891 A 1997 CAPLUS

RN 1310-58-3
RN 7429-90-5
RN 7439-92-1
RN 7439-95-4
RN 7439-96-5
RN 7440-02-0
RN 7440-21-3
RN 7440-25-7
RN 7440-31-5
RN 7440-32-6
RN 7440-33-7
RN 7440-36-0
RN 7440-48-4
RN 7440-62-2
RN 7440-66-6
RN 7440-67-7
RN 7440-74-6
RN 7757-79-1
RN 13473-90-0
RN 1609-19-4
RN 9016-00-6D
RN 57-09-0
RN **78-10-4**

DN 134:194676
TI **Hydrophobic coating** material containing modified gels
IN Jones, Ashley Ward; Lamb, Robert Norman; Zhang, Hua
PA Unisearch Limited, Australia
SO PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C09K003-18
ICS C09D005-00; C09D005-08; C09D005-16; C09D183-06
CC 42-10 (Coatings, Inks, and Related Products)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001014497	A1	20010301	WO 2000-AU993	20000821
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	EP 1210396	A1	20020605	EP 2000-952800	20000821
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL			
	NZ 517308	A	20020726	NZ 2000-517308	20000821
	JP 2003507567	T2	20030225	JP 2001-518815	20000821
PRAI	AU 1999-2345	A	19990820		
	WO 2000-AU993	W	20000821		

AB The present invention provides a method of forming a modified gel capable of forming a hydrophobic surface on which water has a contact angle of at least 150.degree.. The invention also provides a method of forming a **hydrophobic coating** from the modified gel. In some embodiments, the **hydrophobic coating** has an extremely high **hydrophobicity** with a contact angle in excess of 165.degree., and good substrate adhesion. The method involves bonding a gel with **particulate** matter. It is believed that the chem. hydrophobicity of the gel is enhanced by the phys. roughness of the **particulate** matter.

ST modified gel **hydrophobic coating**

IT Silica gel, uses

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**hydrophobic coating** material contg. modified gels)

IT Coating materials

(**hydrophobic; hydrophobic coating** material contg. modified gels)

IT 7631-86-9, Aerosil 200, uses

RL: MOA (Modifier or additive use); USES (Uses)

(colloidal; **hydrophobic coating** material contg. modified gels)

IT 78-10-4DP, Tetraethylorthosilicate, hydrolyzates, reaction

products with methyltriacetoxysilane 4253-34-3DP,

Methyltriacetoxysilane, reaction products with tetraethylorthosilicate hydrolyzates

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**hydrophobic coating** material contg. modified gels)

IT 9016-00-6, PDMS 31900-57-9, Dimethylsilanediol homopolymer

RL: POF (Polymer in formulation); TEM (Technical or engineered material

use); USES (Uses)

(**hydrophobic coating** material contg. modified gels)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Canon Kk; JP 10133002 A 1998 CAPLUS
- (2) Mitsubishi Rayon Co Ltd; JP 05093170 A 1993 CAPLUS
- (3) Shin-Etsu Chemical Co Ltd; EP 0381376 A 1990 CAPLUS
- (4) Toa Gosei Chem Ind Ltd; JP 05001391 A 1993 CAPLUS
- (5) Toshiba Silicone Co Ltd; EP 0430156 A 1991 CAPLUS

RN 7631-86-9

RN **78-10-4DP**

RN 4253-34-3DP

RN 9016-00-6

RN 31900-57-9

L9 ANSWER 5 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2001:554866 CAPLUS

DN 135:138770

TI Blue colorant **powder** compositions and economical method for manufacture

IN Shinko, Takashi; Hoshino, Marenobu; Nakatsuka, Katsuto

PA Nittetsu Mining Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09C003-06

ICS B05D007-00; B41J002-01; C01G049-08; H01F001-11; A61K007-02

CC 42-6 (Coatings, Inks, and Related Products)

Section cross-reference(s): 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001207081	A2	20010731	JP 2000-20748	20000128
PRAI	JP 2000-20748		20000128		

AB The compns. useful as body pigments for color inks, coatings, toners, etc., have a peak between 380-500 nm on a reflective spectrum and are manufd. by depositing >1 layers derived from the reaction products of metal salts in an aq. medium on the surface of a base **particle**, where the deposition layers are consisted of agglomerated crystd. microparticles having voids, the surface of which is again covered by a densend layer of ultrafine **particles** with high refractive index. Thus, dispersing 15 magnetite **powder** (av. **particle** diam. 2.3 .mu.m) in 190 mL a buffer soln. (pH .apprx.9.0) and 150 mL water with the aid of sonification, combining the resulting dispersion with 120 mL a soln. of 10% (as SiO2) Na silicate in water at a pace of 40 mL/min, further stirring for 2 h, decanting, washing, repptg. and drying gave a silica-coated magnetite **powder**, which was deposited similarly with a titania layer to give a blue **particle** having max. refractive peak at 408 nm. Polymg. styrene on the surface of **hydrophobicized particle** above gave **coated particle** useful for toner.

ST magnetite **powder** colorant coating silica titania multilayer deposition; toner magnetite **powder** colorant silica titania multilayer coating; body pigment colorant silica titania multilayer coating; metal salt metal oxide coating body pigment

IT Coating process

Coloring materials

Electrophotographic toners

Inks

(blue colorant **powder** compns. and economical method for manuf.)

IT Oxides (inorganic), uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (coating; on blue colorant **powder** compns. and economical
 method for manuf.)

IT Coating materials
 (metal oxides; on blue colorant **powder** compns. and economical
 method for manuf.)

IT 7429-90-5, Aluminum, uses
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM
 (Technical or engineered material use); PROC (Process); USES (Uses)
 (blue conductive **particle**; blue colorant **powder**
 compns. and economical method for manuf.)

IT 1309-38-2, magnetite, uses
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM
 (Technical or engineered material use); PROC (Process); USES (Uses)
 (blue toner **particle**; economical method for manuf. of blue
 colorant **powder** compns. for inks and toners)

IT 78-10-4, Silicon ethoxide 546-68-9, Titanium isopropoxide
 RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC
 (Process); RACT (Reactant or reagent)
 (co-coating precursor; blue colorant **powder** compns. and
 economical method for manuf.)

IT 7631-86-9, Silica, uses 13463-67-7, Titania, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (deposition layer; on blue colorant **powder** compns. and
 economical method for manuf.)

IT 7439-89-6, Carbonyl iron, uses
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM
 (Technical or engineered material use); PROC (Process); USES (Uses)
 (**powd.**, blue toner **particle**; blue colorant
powder compns. and economical method for manuf.)

IT 1344-09-8, Water glass
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (silica precursor; blue colorant **powder** compns. and
 economical method for manuf.)

IT 13693-11-3, Titanium sulfate
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (titania precursor; blue colorant **powder** compns. and
 economical method for manuf.)

IT 9003-53-6, Polystyrene 63172-01-0, Technovit
 RL: PRP (Properties); TEM (Technical or engineered material use); USES
 (Uses)
 (toner adhesive coating; on blue colorant **powder** compns. and
 economical method for manuf.)

RN 7429-90-5
 RN 1309-38-2
 RN 78-10-4
 RN 546-68-9
 RN 7631-86-9
 RN 13463-67-7
 RN 7439-89-6
 RN 1344-09-8
 RN 13693-11-3
 RN 9003-53-6
 RN 63172-01-0

L9 ANSWER 6 OF 30 CAPLUS COPYRIGHT 2003 ACS
 AN 1999:638422 CAPLUS
 DN 131:279293

TI Electrophotographic toner containing hydrophobic **particles**
 IN Nagai, Takafumi; Nishikaki, Satoshi
 PA Sharp Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03G009-08
 ICS G03G009-09
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11272007	A2	19991008	JP 1998-72402	19980320
PRAI	JP 1998-72402		19980320		

AB The toner comprises 100 parts binder resin- and coloring agent-based color **particles** (av. **particle** size 5-20 .mu.m) **coated** with 0.5-2 parts **hydrophobic** inorg. fine **particles** (vol. resistivity 10¹⁰-12 .OMEGA.-cm; av. **particle** diam. .ltoreq.0.1 .mu.m). The toner shows excellent elec. insulation at high moisture condition in repeated use. The toner gives good images with excellent transfer efficiency and high image concn.

ST electrophotog toner coloring agent **hydrophobic particle coating**; coupling agent treatment **hydrophobic toner particle**; silane treatment **hydrophobic electrophotog toner particle**

IT Carbon black, uses
 RL: DEV (Device component use); USES (Uses)
 (coloring agent; electrophotog. toner comprising **hydrophobic inorg. particle-coated color particles**)

IT Silanes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (coupling agent; electrophotog. toner comprising **hydrophobic inorg. particle-coated color particles**)

IT Coupling agents
 Electrophotographic toners
 (electrophotog. toner comprising **hydrophobic inorg. particle-coated color particles**)

IT 25767-47-9P, Butyl acrylate-styrene copolymer
 RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
 (binder; electrophotog. toner comprising **hydrophobic inorg. particle-coated color particles**)

IT 13463-67-7, Titania, uses
 RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
 (electrophotog. toner comprising **hydrophobic inorg. particle-coated color particles**)

IT 429-60-7 **681-84-5**, Tetramethoxysilane
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (electrophotog. toner comprising **hydrophobic inorg. particle-coated color particles**)

RN 25767-47-9P
 RN 13463-67-7
 RN 429-60-7
 RN **681-84-5**

L9 ANSWER 7 OF 30 CAPLUS COPYRIGHT 2003 ACS
 AN 1994:460729 CAPLUS
 DN 121:60729
 TI Silica sol for **hydrophobic silica film**
 IN Murotani, Masaaki; Koshobu, Jun; Yaguchi, Kazuhiko; Suzuki, Itaru
 PA Fuji Shirishia Kagaku Kk, Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C01B033-145
ICS C01B033-12
CC 49-8 (Industrial Inorganic Chemicals)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 06092621	A2	19940405	JP 1992-242257	19920910
	JP 3360846	B2	20030107		
PRAI	JP 1992-242257		19920910		

AB Alkyl orthosilicates, alcs., water in the amt. of water/alkyl orthosilicate wt. ratio 0.1-0.8, and .gtoreq.1 of compds. having affinity to alc. and selected from aliph. satd. compd., cyclic ketones and arom. compds. are mixed in the presence of acid to produce a sol for the manuf. of a hydrophobic silica. The above sol can be dried to produce **hydrophobic SiO2 powders or coated on a substrate and dried to produce a hydrophobic SiO2 film**

ST **hydrophobic silica film** manuf

IT 56-23-5, Carbon tetrachloride, uses 64-17-5, Ethanol, uses 75-05-8, Acetonitrile, uses 75-52-5, Nitromethane, uses 95-50-1, o-Dichlorobenzene 108-94-1, Cyclohexanone, uses
RL: USES (Uses)

(in **hydrophobic silica film** manuf.)

IT **78-10-4**, Ethyl orthosilicate

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, in **hydrophobic silica film** manuf.)

IT 7631-86-9P, Silica, preparation

RL: PREP (Preparation)

(sol, manuf. of hydrophobic, orthosilicates in)

RN 56-23-5

RN 64-17-5

RN 75-05-8

RN 75-52-5

RN 95-50-1

RN 108-94-1

RN **78-10-4**

RN 7631-86-9P

L9 ANSWER 8 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2002:312540 CAPLUS

DN 136:389501

TI Synthesis and properties of **hydrophobic** and antireflective silica **coating**

AU Zhang, Ye; Wu, Dong; Sun, Yu-Han; Peng, Shao-Yi

CS State Key Laboratory of Coal Conversation, Institute of Coal Chemistry, Chinese Academy of Sciences, Taiyuan, 030001, Peop. Rep. China

SO Wuli Huaxue Xuebao (2002), 18(4), 355-358

CODEN: WHXUEU; ISSN: 1000-6818

PB Beijing Daxue Chubanshe

DT Journal

LA Chinese

CC 57-1 (Ceramics)

Section cross-reference(s): 73

AB Org. methyl-modified silica sols were obtained by hydrolysis and co-condensation reactions in base-catalyzed system by carefully controlling the sol-gel processing from DDS and TEOS. Both **hydrophobic** and antireflective silica **coating** was then prep'd. by spin-**coating** technique from the modified sols. As a result, the moisture resistance of antireflective coating was highly

improved. The properties of modified sols and their effects on the coating were studied by TEM and detn. of **particle** size distribution. In addn., comparison was carried out between organically modified and pure silica **coatings** and the results showed that not only the **hydrophobicity** of the **coating** was greatly improved by the modification with suitable transmittance curve in the wavelength range of 300-800 nm.

- ST silica antireflective **coating** org modification
hydrophobicity sol gel process
- IT Silica gel, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(organically modified, antireflective films; sol-gel processing of organically modified silica antireflective coatings with improved moisture resistance)
- IT Antireflective films
(silica, organically modified; sol-gel processing of organically modified silica antireflective coatings with improved moisture resistance)
- IT Hybrid organic-inorganic materials
(silica-based, antireflective coatings; sol-gel processing of organically modified silica antireflective coatings with improved moisture resistance)
- IT Sol-gel processing
(sol-gel processing of organically modified silica antireflective coatings with improved moisture resistance)
- IT 88029-68-9P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(antireflective coatings; sol-gel processing of organically modified silica antireflective coatings with improved moisture resistance)
- IT 7631-86-9P, Silica, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(gel-glass, antireflective films; sol-gel processing of organically modified silica antireflective coatings with improved moisture resistance)
- IT 756-81-0, Diethyldimethylsilane
RL: CPS (Chemical process); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(precursor; sol-gel processing of organically modified silica antireflective coatings with improved moisture resistance)
- IT **78-10-4**, Silicic acid (H₄SiO₄), tetraethyl ester
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(precursor; sol-gel processing of organically modified silica antireflective coatings with improved moisture resistance)
- RN 88029-68-9P
RN 7631-86-9P
RN 756-81-0
RN **78-10-4**
- L9 ANSWER 9 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 1998:341526 CAPLUS
DN 129:7738
TI Process for manufacturing coated nitride **powder**, and the coated **powder** obtained
IN Eisman, Glenn A.; Kirchhoff, Robert A.; Yalvac, Selim; Howard, Kevin E.; Banker, Brian M.; Kesterson, Matthew R.

PA Dow Chemical Co., USA
SO PCT Int. Appl., 17 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C04B041-50
ICS C04B035-58
CC 58-2 (Cement, Concrete, and Related Building Materials)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9821165	A1	19980522	WO 1997-US19934	19971106
	W: CA, CN, JP, KR, MX				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5923945	A	19990713	US 1996-748301	19961113
PRAI	US 1996-748301		19961113		
AB	The process comprises contacting nitride powder with .gtoreq.1 metal complex(es), organo-Al material, optionally .gtoreq.1 Si compds. or mixts. thereof. The process produces a hydrophobic coating without affecting the desirable properties of the uncoated powder , e.g., good thermal cond., for electronic applications. AlN powder was contacted with a mixt. of Al(Me2CHO)3 in EtOH and Ba(OAc)2 in EtOH, and the EtOH was allowed to evap. The AlN was heated at 450.degree. for 2 h to give a hydrophobic coating .				
ST	nitride powder waterproofing oxide coating; aluminum triisopropoxide coating; barium acetate water resistant coating; calcium acetate water resistant coating; zinc acetate water resistant coating; tetraethyl orthosilicate coating; trimethyl borate coating; lanthanum nitrate coating				
IT	Silanes RL: MOA (Modifier or additive use); MSC (Miscellaneous); NUU (Other use, unclassified); USES (Uses) (coupling agents, compns. contg.; in water-resistant coating formation on nitride powders)				
IT	Nitrides RL: TEM (Technical or engineered material use); USES (Uses) (powder ; water-resistant oxide coating formation on)				
IT	Coupling agents (silanes, compns. contg.; in water-resistant coating formation on nitride powders)				
IT	Coating materials (water-resistant, formation of; on nitride powders)				
IT	62-54-4, Calcium acetate 78-10-4, Tetraethyl orthosilicate 121-43-7, Trimethyl borate 543-80-6, Barium acetate 555-31-7, Aluminum triisopropoxide 557-34-6, Zinc acetate 10099-59-9, Lanthanum nitrate 10124-31-9, Ammonium phosphate RL: MSC (Miscellaneous); PEP (Physical, engineering or chemical process); PROC (Process) (compns. contg.; for water-resistant coating formation on nitride powders)				
IT	10043-11-5, Boron nitride, uses 12033-89-5, Silicon nitride, uses 24304-00-5, Aluminum nitride RL: TEM (Technical or engineered material use); USES (Uses) (powder ; water-resistant oxide coating formation on)				
RE.CNT	4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD				
RE					
	(1) Ebata, Y; US 4163074 A 1979 CAPLUS				
	(2) Knudsen, A; US 5273699 A 1993 CAPLUS				
	(3) Shun-Ichiro, T; US 4626451 A 1986 CAPLUS				
	(4) Sumitomo Electric Industries; EP 0330848 A 1989 CAPLUS				
RN	62-54-4				
RN	78-10-4				

RN 121-43-7
RN 543-80-6
RN 555-31-7
RN 557-34-6
RN 10099-59-9
RN 10124-31-9
RN 10043-11-5
RN 12033-89-5
RN 24304-00-5

L9 ANSWER 10 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 1997:694051 CAPLUS

DN 127:324250

TI Electroluminescent zinc sulfide phosphor with improved moisture resistance and its manufacture

IN Tachiki, Hiroaki; Takahara, Takeshi; Urabe, Takako

PA Toshiba Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09K011-56

ICS C01B013-34; C01G009-08; C09K011-00; C09K011-02; C09K011-08

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09272866	A2	19971021	JP 1996-81130	19960403
PRAI	JP 1996-81130		19960403		

AB The phosphor is manufd. by (1) dispersing (A) ZnS phosphor **particles** contg. .gtoreq.1 activator selected from Cu and Mn and .gtoreq.1 coactivator selected from Cl, Br, I, and Al and (B) .gtoreq.1 fine **particles** selected from SiO₂, Al₂O₃, and TiO₂ in an org. solvent soln. contg. an alkoxide of metals of B or its deriv. as a precursor of a matrix phase and (2) removing the solvents to form a **hydrophobic film** contg. the metal oxide fine **particles** and the resulting matrix phase on the phosphor **particles**. The obtained phosphor is also claimed. The phosphor showed stable luminance.

ST zinc sulfide phosphor electroluminescent moisture resistance; silica **hydrophobic coating** zinc sulfide phosphor; alumina **hydrophobic coating** zinc sulfide phosphor; titania **hydrophobic coating** zinc sulfide phosphor

IT Phosphors

(moisture-resistant electroluminescent zinc sulfide phosphor **coated** with **hydrophobic** metal oxide **film**)

IT 7439-96-5, Manganese, uses 7440-50-8, Copper, uses

RL: MOA (Modifier or additive use); USES (Uses)

(activator; moisture-resistant electroluminescent zinc sulfide phosphor **coated** with **hydrophobic** metal oxide **film**)

IT 7429-90-5, Aluminum, uses 7553-56-2, Iodine, uses 7726-95-6, Bromine, uses 7782-50-5, Chlorine, uses

RL: MOA (Modifier or additive use); USES (Uses)

(coactivator; moisture-resistant electroluminescent zinc sulfide phosphor **coated** with **hydrophobic** metal oxide **film**)

IT 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(moisture-resistant electroluminescent zinc sulfide phosphor

coated with **hydrophobic** metal oxide film)

IT 78-10-4, Tetraethoxysilane 546-68-9, Titanium tetraisopropoxide
555-31-7, Aluminum triisopropoxide 555-75-9, Aluminum triethoxide
1992-48-9, Tetraisopropoxysilane 3087-36-3, Titanium tetraethoxide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(moisture-resistant electroluminescent zinc sulfide phosphor
coated with **hydrophobic** metal oxide film)

IT 1314-98-3, Zinc sulfide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(moisture-resistant electroluminescent zinc sulfide phosphor
coated with **hydrophobic** metal oxide film)

IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropanol,
uses 35296-72-1, Butanol
RL: NUU (Other use, unclassified); USES (Uses)
(solvent; moisture-resistant electroluminescent zinc sulfide phosphor
coated with **hydrophobic** metal oxide film)

RN 7439-96-5
RN 7440-50-8
RN 7429-90-5
RN 7553-56-2
RN 7726-95-6
RN 7782-50-5
RN 1344-28-1
RN 7631-86-9
RN 13463-67-7
RN 78-10-4
RN 546-68-9
RN 555-31-7
RN 555-75-9
RN 1992-48-9
RN 3087-36-3
RN 1314-98-3
RN 64-17-5
RN 67-56-1
RN 67-63-0
RN 35296-72-1

L9 ANSWER 11 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 1999:519050 CAPLUS
DN 131:132323
TI Secondary lithium ion batteries with high humidity tolerance and safety
IN Watanabe, Masaki; Toita, Tsutomu; Maeda, Makoto; Fujita, Takayuki;
Mizusawa, Koji; Sakai, Masaharu; Fujii, Yoshio; Sakaguchi, Masami
PA Nikki Chemical Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01M004-02
ICS H01M004-58; H01M004-62; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 11224664	A2	19990817	JP 1998-25401	19980206
PRAI	JP 1998-25401		19980206		
AB	The batteries use cathodes composed of Li. contg. multiple oxide particles , Li (or Li alloy) or Li intercalating anodes; where the surface of the cathode and/or of the cathode active mass particles are coated with a hydrophobic substance. The hydrophobic substance is preferably a fluoropolymer and/or an org. Si compd.				

ST secondary lithium battery cathode **hydrophobic coating**;
lithium battery cathode **hydrophobic** fluoropolymer
coating

IT Battery cathodes
(cobalt lithium nickel oxide cathodes with **hydrophobic coatings** for batteries)

IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(cobalt lithium nickel oxide cathodes with **hydrophobic coatings** for batteries)

IT 131344-56-4, Cobalt lithium nickel oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(cobalt lithium nickel oxide cathodes with **hydrophobic coatings** for batteries)

IT 75-78-5D, Dichloro dimethyl silane, condensate **78-10-4**, Tetraethoxysilane 9002-84-0, Polytetrafluoroethylene
RL: MOA (Modifier or additive use); USES (Uses)
(cobalt lithium nickel oxide cathodes with **hydrophobic coatings** for batteries)

RN 131344-56-4
RN 75-78-5D
RN **78-10-4**
RN 9002-84-0

L9 ANSWER 12 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 1998:131937 CAPLUS
DN 128:258133
TI Encapsulation of inorganic **particles** by dispersion polymerization in polar media. 1. Silica nanoparticles encapsulated by polystyrene

AU Bourgeat-Lami, Elodie; Lang, Jacques
CS Inst. Charles Sadron (CRM-EAHP), Strasbourg, 67083, Fr.
SO Journal of Colloid and Interface Science (1998), 197(2), 293-308
CODEN: JCISA5; ISSN: 0021-9797
PB Academic Press
DT Journal
LA English
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 37, 57

AB Polymer encapsulation of small silica **particles**, using dispersion polymn. of styrene in aq. ethanol medium with poly(N-vinylpyrrolidone) (PVP) as stabilizer, is described. Silica **particles**, directly synthesized by the Stober process in an aq. ethanol medium, are either unreacted (hydrophilic character) or **coated** with 3-(trimethoxysilyl)propyl methacrylate (MPS) (**hydrophobic** character), which is grafted at the silica **particle** surface. When the bare silica **particles** are used as the seed, there is a strong tendency of the silica beads to cover the surface of the polystyrene **particles** and obviously encapsulation does not occur. On the contrary, when the silica surface is made **hydrophobic** by **coating**, the inorg. **particles** are entirely contained in the polystyrene **particles** as evidenced by microscopy techniques (TEM, SEM, AFM). It is shown that some polystyrene chains are then chem. bonded to the silica **particles**, through the coupling agent MPS, and that only a small amt. of bonded polystyrene, compared to the total polystyrene synthesized, is sufficient to obtain encapsulation of the silica **particles** with the entire amt. of polystyrene synthesized during the polymn. Under our exptl. conditions, each polystyrene latex **particle** contains, on av., 4 to 23 silica beads depending, in **particular**, on the size of the silica. We believe that it is

possible to control the composite **particle** size and morphol. by a convenient choice of the compn. of the system. Moreover, this new polymer-encapsulation process could be used to synthesize other org.-inorg. composite **particles**, using, for example, other monomers or minerals.

ST dispersion polymn polystyrene encapsulation silica nanoparticle; trimethoxysilylpropyl methacrylate coupling agent silica

IT Coupling agents
((trimethoxysilyl)propyl methacrylate; polystyrene encapsulation of silica nanoparticles coated with)

IT Polymerization
(dispersion; polystyrene encapsulation of silica nanoparticles by dispersion polymn.)

IT Encapsulation
Nanoparticles
Polymer morphology
Surface area
(polystyrene encapsulation of silica nanoparticles by dispersion polymn.)

IT 2530-85-0, 3-(Trimethoxysilyl)propyl methacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(coupling agents; polystyrene encapsulation of silica nanoparticles coated with)

IT 7631-86-9, Silica, processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(polystyrene encapsulation of silica nanoparticles by dispersion polymn.)

IT **78-10-4**, Tetraethyl orthosilicate
RL: RCT (Reactant); RACT (Reactant or reagent)
(polystyrene encapsulation of silica nanoparticles by dispersion polymn.)

IT 9003-53-6P, Polystyrene
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polystyrene encapsulation of silica nanoparticles by dispersion polymn.)

RN 2530-85-0
RN 7631-86-9
RN **78-10-4**
RN 9003-53-6P

L9 ANSWER 13 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 2000:171704 CAPLUS
DN 132:254771
TI Modification of surface properties of alumina by plasma treatment
AU Pereira, Gilberto J.; Da Silva, Maria Lucia P.; Tan, Ing H.; Gouvea, Douglas
CS Escola Politecnica da Universidade de Sao Paulo, Depto. de Eng. Metalurgica e de Materiais, Sao Paulo, CEP 05508-900, Brazil
SO Journal of Materials Chemistry (2000), 10(2), 259-261
CODEN: JMACEP; ISSN: 0959-9428
PB Royal Society of Chemistry
DT Journal
LA English
CC 57-2 (Ceramics)
AB Tetraethylorthosilicate (TEOS), hexamethyldisilazane and n-hexane, plasma deposited on alumina pellets, result in **hydrophobic** and chem. resistant **films**, while TEOS treated alumina **powder** showed significant changes in the zeta potential as a function of pH.
ST ceramic alumina surface modification plasma treatment; silane plasma deposited film ceramic alumina surface property modification; silazane

plasma deposited film ceramic alumina surface property modification;
hexane plasma deposited film ceramic alumina surface property
modification; **hydrophobicity** surface ceramic alumina plasma
deposited film; zeta potential surface ceramic alumina plasma
deposited film; thermal behavior surface ceramic alumina plasma deposited
film; acidity surface ceramic alumina plasma deposited film

IT **Powders**
Powders
(ceramic, alumina; effect of silane and disilazane and hexane
plasma-deposited films on alumina **powder** surface properties)

IT **Films**
Films
(ceramic; effect of silane and disilazane and hexane plasma-deposited
films on alumina **powder** surface properties)

IT **Heat treatment**
(effect of heat treatment on **hydrophobicity** of silane and
silazane and hexane **films** on alumina **powders**)

IT **Contact angle**
Dispersion (of materials)
Hydrophobicity
Surface structure
Zeta potential
(effect of silane and disilazane and hexane plasma-deposited
films on alumina **powder** surface properties)

IT **Thickness**
(effect of thickness of plasma deposited **film** on alumina
powders on degree of **hydrophobicity**)

IT **Ceramics**
Ceramics
(films; effect of silane and disilazane and hexane plasma-deposited
films on alumina **powder** surface properties)

IT **Vapor deposition process**
(plasma; effect of silane and disilazane and hexane plasma-deposited
films on alumina **powder** surface properties)

IT **Ceramics**
Ceramics
(**powders**, alumina; effect of silane and disilazane and hexane
plasma-deposited films on alumina **powder** surface properties)

IT 1344-28-1, Aluminum oxide (Al₂O₃), processes
RL: PEP (Physical, engineering or chemical process); TEM (Technical or
engineered material use); PROC (Process); USES (Uses)
(effect of silane and disilazane and hexane plasma-deposited films on
alumina **powder** surface properties)

IT **78-10-4**, Tetraethoxysilane 110-54-3, n-Hexane, processes
999-97-3, Hexamethyldisilazane
RL: DEV (Device component use); MOA (Modifier or additive use); PEP
(Physical, engineering or chemical process); PROC (Process); USES (Uses)
(films; effect of silane and disilazane and hexane plasma-deposited
films on alumina **powder** surface properties)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Akovali, G; Polymer 1999, V40, P7417 CAPLUS
- (2) Alexandex, J; J Chem Phys 1985, V83, P5981
- (3) Anon; Plasma Deposition, Treatment and Etching of Polymers 1990
- (4) Das, B; J Adhes Sci Technol 1996, V10, P1371 CAPLUS
- (5) Denes, F; Elsevier Trends J 1997, V5(1), P23 CAPLUS
- (6) Fracassi, F; Polym Prepr 1993, P673 CAPLUS
- (7) Fry, H; Solid State Technol 1994
- (8) Jordan, E; J Electrochem Soc 1961, V108, P478 CAPLUS
- (9) Kim, M; Thin Solid Films 1997, V303, P173 CAPLUS
- (10) Oroshnik, J; J Electrochem Soc 1969, V115, P649
- (11) Park, S; Pollimo 1992, V16, P94 CAPLUS

(12) Tan, I; Proc 14th Int Conf Plasma Chemistry 1999, VIII, P1393
(13) Weichart, J; Surf Coat Technol 1993, V59, P342 CAPLUS
RN 1344-28-1
RN 78-10-4
RN 110-54-3
RN 999-97-3

L9 ANSWER 14 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 2003:242408 CAPLUS
DN 138:260114
TI Cosmetic compositions containing silica-coated mixed crystal oxide

particles

IN Ishii, Nobuaki; Wada, Kouichi; Takama, Michihiro

PA Showa Denko K. K., Japan

SO PCT Int. Appl., 90 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C09C001-04

ICS C09C001-24; C09C001-36; C09C003-06; A61K008-18; A61Q017-04

CC 62-4 (Essential Oils and Cosmetics)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003025071	A1	20030327	WO 2002-JP9432	20020913
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRAI JP 2001-280147 A 20010914
US 2002-368967P P 20020402

AB Provided are a silica-coated mixed crystal oxide **particle** which has high dispersibility, excellent visible light transparency and superior UV-shielding capability and which is sufficiently reduced in the photocatalytic activity; an economical prodn. process thereof; and an UV-shielding cosmetic material contg. the silica-coated mixed crystal oxide **particle**, which is **particularly** excellent in the visible light transparency. The surface of a mixed crystal oxide **particle** having a BET sp. surface area of 10 to 200 m²/g and contg. primary **particles** in a mixed crystal is covered with a dense and thin film silica. Thus, a silica-coated mixed crystal oxide obtained by coating silica on ZnO at high temps. (3.0%) was added to a skin lotion contg. EtOH 39.6, 1,3-butylene glycol 9.5, castor oil 4.9, methylparaben 0.2, and water 42.8%.

ST silica coated mixed crystal oxide **particle** cosmetic

IT Antioxidants

Cosmetics

Sunscreens

Surface area

UV stabilizers

(cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Oxides (inorganic), biological studies

RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)

(cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Cosmetics
(creams; cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Cosmetics
(foundations; cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Cosmetics
(gels; cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Polysiloxanes, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(**hydrophobicity** agents; cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Cosmetics
(lipsticks; cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Cosmetics
(lotions; cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Fatty acids, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(salts, **hydrophobicity** agents; cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT Mica-group minerals, biological studies
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(silicone-treated; cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT 57-11-4, Stearic acid, biological studies **78-10-4**, Tetraethoxysilane
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT 7631-86-9, Silica, biological studies
RL: COS (Cosmetic use); FMU (Formation, unclassified); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses)
(cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT 13463-67-7, Titanium oxide, biological studies
RL: COS (Cosmetic use); PEP (Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process); USES (Uses)
(cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT 1314-13-2P, Zinc oxide (ZnO), biological studies
RL: COS (Cosmetic use); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); USES (Uses)
(cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT 64-17-5, Ethanol, processes 67-56-1, Methanol, processes 67-64-1, Acetone, processes 71-23-8, 1-Propanol, processes 71-41-0, Pentanol, processes 109-99-9, THF, processes 123-91-1, 1,4-Dioxane, processes 506-87-6, Ammonium carbonate 540-69-2, Ammonium formate 631-61-8, Ammonium acetate 1066-33-7, Ammonium hydrogen carbonate 7446-70-0, Aluminum chloride (AlCl₃), processes 7550-45-0, Titanium chloride (TiCl₄) (T-4)-, processes 7664-41-7, Ammonia, processes 10026-04-7
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(cosmetic compns. contg. silica-coated mixed crystal oxide **particles**)

IT 7803-62-5D, Silane, alkoxy derivs.
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(**hydrophobicity** agents; cosmetic compns. contg. silica-

coated mixed crystal oxide particles)
IT 7440-66-6, Zinc, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(in zinc oxide prepn.; cosmetic compns. contg. silica-coated mixed
crystal oxide particles)
IT 1309-37-1, Red iron oxide, biological studies 12227-89-3, Black iron
oxide 14807-96-6, Talc, biological studies 51274-00-1, Yellow iron
oxide
RL: COS (Cosmetic use); BIOL (Biological study); USES (Uses)
(silicone-treated; cosmetic compns. contg. silica-coated mixed crystal
oxide particles)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Dietz, A; US 3640744 A 1972 CAPLUS
- (2) Ishii, N; WO 0042112 A 2000 CAPLUS
- (3) Ishii, N; US 6235270 B1 2001 CAPLUS
- (4) Kozaki, S; US 5902569 A 1999 CAPLUS
- (5) Tomikawa, S; US 2001014396 A1 2001 CAPLUS

RN 57-11-4
RN 78-10-4
RN 7631-86-9
RN 13463-67-7
RN 1314-13-2P
RN 64-17-5
RN 67-56-1
RN 67-64-1
RN 71-23-8
RN 71-41-0
RN 109-99-9
RN 123-91-1
RN 506-87-6
RN 540-69-2
RN 631-61-8
RN 1066-33-7
RN 7446-70-0
RN 7550-45-0
RN 7664-41-7
RN 10026-04-7
RN 7803-62-5D
RN 7440-66-6
RN 1309-37-1
RN 12227-89-3
RN 14807-96-6
RN 51274-00-1

L9 ANSWER 15 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2002:397708 CAPLUS

DN 136:409056

TI Lithographic printing plate material for heat mode recording

IN Hoshi, Satoshi; Sonokawa, Koji

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

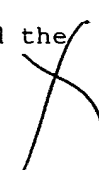
IC ICM B41N001-14

ICS G03F007-00; G03F007-004; G03F007-11

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2002154277 A2 20020528 JP 2000-351358 20001117
 PRAI JP 2000-351358 20001117
 AB The material has a hydrophilic image recording **layer** contg. a **hydrophobic** precursor for forming a **hydrophobic** area by heat on one side of a support and a backing layer contg. metal oxide **particles** on the other side of it. It prevents blocking and conveying defects resulting from adhesion between the support and the image recording layer. 
 ST heat sensitive lithog plate hydrophobic precursor; metal oxide **particle** backing layer lithog plate
 IT Lithographic plates
 (lithog. plate with backing layer contg. metal oxide **particle**)
 IT Aminoplasts
 Polyesters, uses
 Polyurethanes, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (lithog. plate with backing layer contg. metal oxide **particle**)
 IT 7631-86-9, Silica, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (colloidal, image-forming layer; lithog. plate with backing layer contg. metal oxide **particle**)
 IT **78-10-4**, Tetraethoxysilane
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (image-forming layer; lithog. plate with backing layer contg. metal oxide **particle**)
 IT 429677-75-8P
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (image-forming layer; lithog. plate with backing layer contg. metal oxide **particle**)
 IT 1304-28-5, Barium oxide, uses 1309-48-4, Magnesium oxide, uses 1312-43-2, Indium oxide 1313-27-5, Molybdenum oxide, uses 1314-13-2, Zinc oxide, uses 1314-62-1, Vanadia, uses 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 12673-86-8, Antimony tin oxide 13463-67-7, Titania, uses
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (lithog. plate with backing layer contg. metal oxide **particle**)
 IT 9003-08-1, Sumitex Resin M3 67527-20-2, Jurymer ET 410
 RL: TEM (Technical or engineered material use); USES (Uses)
 (lithog. plate with backing layer contg. metal oxide **particle**)
 IT 9011-14-7, MX 300
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
 (matting agent; lithog. plate with backing layer contg. metal oxide **particle**)
 RN 7631-86-9
 RN **78-10-4**
 RN 429677-75-8P
 RN 1304-28-5
 RN 1309-48-4
 RN 1312-43-2
 RN 1313-27-5
 RN 1314-13-2
 RN 1314-62-1
 RN 1332-29-2
 RN 1344-28-1

RN 12673-86-8
RN 13463-67-7
RN 9003-08-1
RN 67527-20-2
RN 9011-14-7

L9 ANSWER 16 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 1997:399862 CAPLUS

DN 127:38498

TI Manufacture of hydrophobic glass with high transparency

IN Nozu, Takashi; Yamamoto, Hiroaki; Mitani, Ikkoku; Sunada, Takashi;
Teranishi, Toyoyuki

PA Nippon Sheet Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C03C017-42

ICS C09K003-18

CC 57-1 (Ceramics)

Section cross-reference(s): 58

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09100141	A2	19970415	JP 1996-203344	19960801
PRAI	JP 1995-198582		19950803		

AB The process comprises: forming an uneven undercoat on a glass substrate with a coating liq. contg. hydrolyzed metal alkoxide or hydrolyzed metal chelate, and fine metal oxide **particles**, and forming a hydrophic **layer** with a **hydrophobic** agent contg. fluoroalkyl group, where the metal oxide **particles** have a size of 2-500 nm. Te glass is suitable for automobiles and buildings.

ST hydrophobic glass transparency automobile building; undercoat metal oxide **particle** hydrophobic glass

IT Membranes, nonbiological

(hydrophobic; manuf. of hydrophobic glass with high transparency for automobiles and buildings)

IT Automobiles

Buildings

Coating materials

Coating process

(manuf. of **hydrophobic** glass with high transparency for automobiles and buildings)

IT Glass, properties

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(manuf. of hydrophobic glass with high transparency for automobiles and buildings)

IT 7631-86-9, Silica, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(colloidal, undercoat **coating** soln. contg.; in manuf. of **hydrophobic** glass with high transparency for automobiles and buildings)

IT 1314-23-4, Zirconia, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(sol, undercoat **coating** soln. contg.; in manuf. of **hydrophobic** glass with high transparency for automobiles and buildings)

IT 78-10-4

RL: TEM (Technical or engineered material use); USES (Uses)

(undercoat **coating** soln. contg.; in manuf. of **hydrophobic** glass with high transparency for automobiles and

buildings)
RN 7631-86-9
RN 1314-23-4
RN 78-10-4

L9 ANSWER 17 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 2002:183809 CAPLUS
DN 136:233662
TI Coating compositions for heat-reflective, superphobic coatings
IN Rose, Klaus; Heinrich, Matthias; Haas, Karl-Heinz; Koehl, Michael
PA Fraunhofer-Gesellschaft Zur Foerderung Der Angewandten Forschung E.V.,
Germany
SO Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DT Patent
LA German
IC ICM C09D183-04
ICS C09D183-08; C09D183-14; C09D183-10; C04B041-49
CC 42-10 (Coatings, Inks, and Related Products)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1186640	A2	20020313	EP 2001-119527	20010814
	EP 1186640	A3	20030326		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	DE 10044216	A1	20020502	DE 2000-10044216	20000907
	US 2002123561	A1	20020905	US 2001-946961	20010906
PRAI	DE 2000-10044216	A	20000907		

AB The title compns., giving **films** which are **hydrophobic**,
oleophobic, and heat-reflective, contain hydrolyzable hydrocarbylsilanes
or their hydrolytic condensates, IR-reflective pigments with
particle size 1-50 .mu.m, and solvents and/or dispersing media;
the pigments either being present in amts. giving films which are opaque
to visible light or other materials giving such opacity being used. A
mixt. of 3-(diethoxymethylsilyl)propylamine 1.91, (EtO)4Si 0.208, and H2O
10 g was pre-hydrolyzed for 20 min, mixed with poly(acrylic acid) 0.5,
Ti(OEt)4 0.22, Et acetoacetate 0.52, and pigment (Paliochrom R2/237) 0.93
g, and coated (80 .mu.m) on a substrate to give a film which dried
tack-free within 1 h and had a contact angle vs. H2O of 82.degree..
ST coating heat reflective superphobic; polysiloxane coating heat reflective;
polyacrylic acid coating heat reflective; pigment IR reflective coating;
amine silylalkyl hydrolyzate coating; oleophobic coating heat reflective;
hydrophobic coating heat reflective
IT Pigments, nonbiological
(IR-reflective; coating compns. for heat-reflective, superphobic
coatings)
IT Thermal insulators
(coating compns. for heat-reflective, superphobic coatings)
IT Coating materials
(heat-reflective; coating compns. for heat-reflective, superphobic
coatings)
IT Silanes
RL: TEM (Technical or engineered material use); USES (Uses)
(hydrolyzates; coating compns. for heat-reflective, superphobic
coatings)
IT Polyvinyl butyrals
RL: TEM (Technical or engineered material use); USES (Uses)
(silanized; coating compns. for heat-reflective, superphobic coatings)
IT 77-58-7, Dibutyltin dilaurate **78-10-4D**, Tetraethyl silicate,
hydrolyzates 546-68-9, Tetraisopropyl titanate 919-30-2D, hydrolyzates
1112-39-6D, Dimethoxydimethylsilane, hydrolyzates 2530-85-0D,

*application not
yet assigned*

hydrolyzates 3087-36-3, Tetraethyl titanate 3179-76-8D,
3-(Diethoxymethylsilyl)propylamine, hydrolyzates 7439-92-1D, Lead, lead
7440-56-4D, Germanium, tetraalkoxides 7440-67-7D, Zirconium,
tetraalkoxides 9002-89-5 9002-89-5D, reaction products with
(triethoxysilyl)propyl isocyanate 9003-01-4, Poly(acrylic acid)
24801-88-5D, 3-(Triethoxysilyl)propyl isocyanate, reaction products with
poly(vinyl alc.) 25119-62-4D, Allyl alcohol-styrene copolymer, reaction
products with (triethoxysilyl)propyl isocyanate 51851-37-7D,
hydrolyzates 93642-68-3D, reaction products with poly(vinyl alc.)
RL: TEM (Technical or engineered material use); USES (Uses)
(coating compns. for heat-reflective, superphobic coatings)

RN 77-58-7
RN 78-10-4D
RN 546-68-9
RN 919-30-2D
RN 1112-39-6D
RN 2530-85-0D
RN 3087-36-3
RN 3179-76-8D
RN 7439-92-1D
RN 7440-56-4D
RN 7440-67-7D
RN 9002-89-5
RN 9002-89-5D
RN 9003-01-4
RN 24801-88-5D
RN 25119-62-4D
RN 51851-37-7D
RN 93642-68-3D

L9 ANSWER 18 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 1996:26774 CAPLUS

DN 124:127851

TI Surface functionalized colloidal silica **particles** from an
inverse microemulsion sol gel process

AU Espiard, P.; Guyot, A.; Mark, J. E.

CS Laboratoire Chimie Procédés Polymerisation, CNRS, Vernaison, Fr.

SO Journal of Inorganic and Organometallic Polymers (1995), 5(4), 391-407
CODEN: JIOPE4; ISSN: 1053-0495

PB Plenum

DT Journal

LA English

CC 66-4 (Surface Chemistry and Colloids)

AB Colloidal silica **particles** are prep'd. via a sol gel technique
carried out in an inverse microemulsion of water in a toluene soln. of
tetraethoxysilane (TEOS), stabilized by either an anionic surfactant AOT
or isopropanol. Functionalized material was obtained using a functional
coupling agent (RO)₃Si(CH₂)₃X, X being a functional group such as
methacryloyl, thiol, vinyl, amino group, or a chlorine atom.
Functionalization can be carried out either directly via the direct
copolycondensation of TEOS and the coupling agent, or in a two-step
process involving a core-shell polycondensation of the coupling agent onto
preformed silica **particles**. Kinetic studies of the
copolycondensation are carried out using either ²⁹Si NMR anal. or liq.
chromatog. They show that the consumption of TEOS is more rapid than that
of the coupling agent. The materials are characterized both chem.
(elemental anal., FTIR, ¹³C and ²⁹Si NMR CPMAS anal.), and by their
particle size. The silica functionalized with a polymerizable
methacryloyl group is encapsulated by a polymer layer in an inverse
emulsion polymn. of acrylic acid. After inversion of the emulsion in
water, the resulting material is covered with a **layer** of
hydrophobic polymer in a conventional emulsion polymn.

ST surface functionalized colloidal silica **particle**
 IT 67-63-0, Isopropanol, properties 108-88-3, Toluene, properties
 577-11-7, AOT
 RL: PRP (Properties)
 (colloidal SiO₂ sol-gel formation in inversion microemulsion of water
 in toluene (EtO)₄Si soln. stabilized by surfactants)
 IT **78-10-4**, Tetraethoxysilane
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (colloidal SiO₂ sol-gel formation in inversion microemulsion of water
 in toluene (EtO)₄Si soln. stabilized by surfactants)
 IT 7631-86-9, Silica, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (surface functionalized colloidal SiO₂ sol-gel formation)
 RN 67-63-0
 RN 108-88-3
 RN 577-11-7
 RN **78-10-4**
 RN 7631-86-9

L9 ANSWER 19 OF 30 CAPLUS COPYRIGHT 2003 ACS
 AN 2003:118200 CAPLUS
 DN 138:174511

TI Method of forming metalloxane polymers from alkoxides and siloxanes with
 organo-metallic catalyst for coatings or glass monoliths
 IN Feng, Xiangdong; Zhang, Wei; Baldwin, Charles A.; Faust, William D.; Rose,
 Graham B.

PA USA
 SO U.S. Pat. Appl. Publ., 8 pp.
 CODEN: USXXCO

DT Patent
 LA English
 IC ICM C03B008-02
 NCL 065017200
 CC 57-1 (Ceramics)

Section cross-reference(s): 38, 55

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003029193	A1	20030213	US 2001-878162	20010608
PRAI	US 2001-878162		20010608		

AB A method of forming a coating including a metalloxane polymer on a
 substrate is described. The method includes forming a non-aq. mixt.
 including an alkoxide, a siloxane, and an organo-metallic catalyst,
 applying the mixt. to the substrate, and heating the substrate to cure the
 coating. The mixt. can also comprise one or more fillers including
 ceramic **powders**, glass **powders**, metal **powders**
 , and pigments The method can be used to apply coatings to metal, glass,
 porcelain enamel, ceramic, and polymeric substrates. The method does not
 require the use of acids or bases and water to promote the hydrolysis and
 condensation of alkoxides. Thus, the method can be used to form
 metalloxane polymers using a variety of alkoxides having different
 hydrolysis rates. The avoidance of water has the added advantage of
 improving the shelf-life of the coating mixt. Furthermore, protective
 complexing agents such as, for example, acetyl acetone, polyethylene
 glycol, and diethylene glycol, can be used to stabilize the coating mixt.
 and further extend the shelf-life.

ST metalloxane polymer synthesis coating property; glass monolith precursor
 metalloxane polymer synthesis

IT Silsesquioxanes
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or
 engineered material use); USES (Uses)
 (Ph, di-Me polysiloxane-, polymers with ethoxysilanes or alkoxides;

- forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Coating materials
(acid-resistant; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Polysiloxanes, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(alkoxy-terminated, starting material; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT **Powders**
(ceramic, fillers; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Polysiloxanes, preparation
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(coatings/monoliths; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Alcohols, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(compds., starting material; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(complexing agent; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Polysiloxanes, properties
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(di-Me, Ph silsesquioxane-, polymers with ethoxysilanes or alkoxides; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Coating process
(dip; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Glass, uses
RL: MOA (Modifier or additive use); USES (Uses)
(filler; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Glass **powders**
RL: NUU (Other use, unclassified); USES (Uses)
(fillers; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Adhesion, physical
Coating materials
Complexing agents
Fillers
Glass substrates
Pigments, nonbiological
Sintering
(forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Polysiloxanes, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(hydrogen-terminated, starting material; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)
- IT Coating materials

(**hydrophobic**; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Polysiloxanes, processes
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (hydroxy-terminated, starting material; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Enamels (vitreous)
 (porcelain, substrates; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Ceramics
 (**powders**, fillers; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Metals, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (**powders**, fillers; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Titanoxanes
 Zirconoxanes
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (siloxane-, coatings/monoliths; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Organometallic compounds
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (starting material; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Polymers, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (substrates; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Polysiloxanes, preparation
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (titanoxane-, coatings/monoliths; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT Polysiloxanes, preparation
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (zirconoxane-, coatings/monoliths; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT 31692-79-2D, Gelest DMS-S 12-100GM, polymers with methyltriethoxysilane, tetraethoxysilane/titanium isopropoxide/zirconium butoxide and Dow Corning 3074
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (DMS-S 12-100GM, coatings/monoliths; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT 77-58-7, Dibutyltin didodecanoate 1067-33-0, Dibutyltin diacetate 1067-55-6, Dibutyldimethoxystannane 5967-09-9, Bis(acetoxydibutyltin) oxide 61746-04-1
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT 78-10-4D, Tetraethoxysilane, polymers with methyltriethoxysilane and Dow Corning 3074 546-68-9D, Titanium isopropoxide, polymers with methyltriethoxysilane and Dow Corning 3074 780-69-8D, Phenyltriethoxysilane, polymers with methyltriethoxysilane and Dow Corning 3074 1071-76-7D, Zirconium butoxide, polymers with methyltriethoxysilane and Dow Corning 3074 2031-67-6D, Methyltriethoxysilane, polymers with phenyltriethoxysilane/tetraethoxysilane/titanium isopropoxide/zirconium butoxide and Dow Corning 3074
RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(coatings/monoliths; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(colloidal, filler; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT 111-46-6, Diethylene glycol, uses 123-54-6, Acetyl acetone, uses 25322-68-3, Polyethylene glycol
RL: MOA (Modifier or additive use); USES (Uses)
(complexing agent; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT 1344-28-1, Alumina, uses 14940-68-2, Zircon
RL: MOA (Modifier or additive use); USES (Uses)
(filler; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT 1314-13-2, Zinc oxide (ZnO), uses 1314-23-4, Zirconium oxide (ZrO₂), uses 7440-66-6, Zinc, uses 10101-52-7, Zirconium silicate (ZrSiO₄) 13463-67-7, Titanium oxide (TiO₂), uses
RL: MOA (Modifier or additive use); USES (Uses)
(fillers; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

IT 12597-69-2, Steel, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrate; forming metalloxane polymers from alkoxide and siloxane and organo-metallic catalyst for coatings or glass monoliths)

RN 31692-79-2D
RN 77-58-7
RN 1067-33-0
RN 1067-55-6
RN 5967-09-9
RN 61746-04-1
RN 78-10-4D
RN 546-68-9D
RN 780-69-8D
RN 1071-76-7D
RN 2031-67-6D
RN 7631-86-9
RN 111-46-6
RN 123-54-6
RN 25322-68-3
RN 1344-28-1
RN 14940-68-2
RN 1314-13-2
RN 1314-23-4
RN 7440-66-6
RN 10101-52-7
RN 13463-67-7
RN 12597-69-2

TI Lithographic printing plate material with undercoat layer for heat mode recording
 IN Hoshi, Satoshi; Sonokawa, Koji
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 25 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM B41N001-14
 ICS G03F007-00; G03F007-004; G03F007-027; G03F007-032; G03F007-038; G03F007-11
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002154278	A2	20020528	JP 2000-351359	20001117
PRAI	JP 2000-351359		20001117		
AB	The material comprises a plastic film support successively having thereon an undercoat layer contg. metal oxide particles and an image recording layer contg. a hydrophobic precursor for forming a hydrophobic area by heat. It showed improved adhesion between the support and its adjacent layer and printing durability.				
ST	lithog plate undercoat layer metal oxide; hydrophobic precursor heat sensitive lithog plate				
IT	Lithographic plates (heat-sensitive lithog. plate with undercoat layer contg. metal oxide)				
IT	Aminoplasts Epoxy resins, uses Polyesters, uses Polyurethanes, uses RL: TEM (Technical or engineered material use); USES (Uses) (heat-sensitive lithog. plate with undercoat layer contg. metal oxide)				
IT	7631-86-9, Silica, uses RL: TEM (Technical or engineered material use); USES (Uses) (colloidal, image-forming layer; heat-sensitive lithog. plate with undercoat layer contg. metal oxide)				
IT	1304-28-5, Barium oxide, uses 1309-48-4, Magnesium oxide, uses 1312-43-2, Indium oxide 1313-27-5, Molybdenum oxide, uses 1314-13-2, Zinc oxide, uses 1314-62-1, Vanadia, uses 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 12673-86-8, Antimony tin oxide 13463-67-7, Titania, uses 37275-76-6, Aluminum zinc oxide 39409-74-0, Niobium tin oxide 50926-11-9, Indium tin oxide RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses) (heat-sensitive lithog. plate with undercoat layer contg. metal oxide)				
IT	9003-08-1, Sumitex Resin M3 67527-20-2, Jurymer ET 410 255913-12-3, RA 85 392238-66-3, AA 64 RL: TEM (Technical or engineered material use); USES (Uses) (heat-sensitive lithog. plate with undercoat layer contg. metal oxide)				
IT	429677-75-8P, Allyl methacrylate-butyl methacrylate-polyoxyethylene nonylphenyl ether copolymer RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (image-forming layer; heat-sensitive lithog. plate with undercoat layer contg. metal oxide)				
IT	78-10-4, Tetraethoxysilane RL: TEM (Technical or engineered material use); USES (Uses) (image-forming layer; heat-sensitive lithog. plate with undercoat layer contg. metal oxide)				
IT	25749-98-8, Chemipearl S 120 71228-86-9, Denacol EX 614B RL: TEM (Technical or engineered material use); USES (Uses)				

(intermediate layer; heat-sensitive lithog. plate with undercoat layer
contg. metal oxide)

IT 9011-14-7, MX 300 196623-68-4, MX 500
RL: MOA (Modifier or additive use); TEM (Technical or engineered material
use); USES (Uses)
(matting agent; heat-sensitive lithog. plate with undercoat layer
contg. metal oxide)

RN 7631-86-9
RN 1304-28-5
RN 1309-48-4
RN 1312-43-2
RN 1313-27-5
RN 1314-13-2
RN 1314-62-1
RN 1332-29-2
RN 1344-28-1
RN 12673-86-8
RN 13463-67-7
RN 37275-76-6
RN 39409-74-0
RN 50926-11-9
RN 9003-08-1
RN 67527-20-2
RN 255913-12-3
RN 392238-66-3
RN 429677-75-8P
RN **78-10-4**
RN 25749-98-8
RN 71228-86-9
RN 9011-14-7
RN 196623-68-4

L9 ANSWER 21 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 1999:627148 CAPLUS
DN 131:357395
TI Radio frequency plasma chemical vapor deposited thin films of diamond-like
carbon/SiO₂ nanocomposites by way of tetraethoxysilane
AU Senkevich, Jay J.; Leber, Donald E.; Tutor, Michael J.; Heiks, Noel A.;
Ten Eyck, Greg A.; Scherrer, David W., II
CS ACT-MicroDevices, Radford, VA, 24141, USA
SO Journal of Vacuum Science & Technology, B: Microelectronics and Nanometer
Structures (1999), 17(5), 2129-2135
CODEN: JVTBD9; ISSN: 0734-211X
PB American Institute of Physics
DT Journal
LA English
CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related
Properties)
Section cross-reference(s): 66
AB Diamond-like C (DLC) has gained recent interest since it can be easily
deposited at room temp. with a conventional radio frequency (rf) plasma.
DLC has the potential benefits of a low coeff. friction, high hardness,
and can be deposited with common inexpensive precursors. However, for
optical applications used in the visible spectrum DLC has the problem of
having a peak absorbance at 305-330 nm. This absorbance with thicker
films or for higher vol. fractions of DLC in a nanocomposite structure
monotonically decreases into the visible spectrum where the film appears
yellowish to brownish. The work here has focused on using a common alkoxy
silane precursor, tetraethoxysilane, to deposit DLC/SiO₂ nanocomposites at
room temp. using an ion-assisted process to deposit transparent
antiscratch films in the visible spectrum. The highest scratch resistant
nonabsorbing films were deposited at low pressures (.apprx.15 mtorr), high

flows of O (>120 sccm), at modest power densities (.apprx.0.2 W/cm²), and low flows of Ar (15 sccm) keeping the TEOS bubbler temp. const. Under these conditions very little SP2 C is deposited, hence, little absorption. However, more important Ar bombardment allows the SiO₂ to be nearly hydroxyl free and the C that is left may allow the **films** to retain a lower coeff. of friction and their **hydrophobicity**. At higher system pressures (.apprx.200 mtorr) the films deposited were much softer than the films deposited at lower system pressures (.apprx.30 mtorr), hence, the importance of ion bombardment. At higher power densities (.apprx.1.4 W/cm²) DLC is deposited independent of other system parameters. The measured absorptivity of DLC was 31,600 cm⁻¹ at 305-330 nm.

- ST diamondlike carbon film silica nanocomposite RF CVD optical property;
reflection IR diamondlike carbon film silica nanocomposite RF CVD; surface
hydroxyl diamondlike carbon film silica nanocomposite RF CVD; argon
bombardment diamondlike carbon film silica nanocomposite RF CVD;
absorption optical diamondlike carbon film silica nanocomposite RF CVD;
refractive index diamondlike carbon film silica nanocomposite RF CVD; UV
visible diamondlike carbon film silica nanocomposite RF CVD; friction
diamondlike carbon film silica nanocomposite RF CVD;
hydrophobicity diamondlike carbon film silica
nanocomposite RF CVD; hardness diamondlike carbon film silica
nanocomposite RF CVD; plasma CVD RF diamondlike carbon film silica
nanocomposite; PECVD RF diamondlike carbon film silica nanocomposite
optical property
- IT Vapor deposition process
(plasma, radio frequency; radio frequency plasma CVD thin films of
diamond-like carbon/silica nanocomposites using TEOS with optical
properties)
- IT Absorptivity
Friction
Hardness (mechanical)
Hydrophobicity
IR reflectance spectra
Ion bombardment
Nanocomposites
Optical absorption
Refractive index
UV and visible spectra
(radio frequency plasma CVD thin **films** of diamond-like
carbon/silica nanocomposites using TEOS with optical properties)
- IT Hydroxyl group
(surface; radio frequency plasma CVD thin films of diamond-like
carbon/silica nanocomposites using TEOS with optical properties)
- IT 7782-40-3, Diamond, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(carbon -like; radio frequency plasma CVD thin films of diamond-like
carbon/silica nanocomposites using TEOS with optical properties)
- IT 7440-44-0, Carbon, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)
(diamond-like; radio frequency plasma CVD thin films of diamond-like
carbon/silica nanocomposites using TEOS with optical properties)
- IT 7440-37-1D, Argon, ion, uses
RL: NUU (Other use, unclassified); USES (Uses)
(ion bombardment **particle**; radio frequency plasma CVD thin
films of diamond-like carbon/silica nanocomposites using TEOS with
optical properties)
- IT **78-10-4**, TEOS 7782-44-7, Oxygen, uses
RL: NUU (Other use, unclassified); USES (Uses)
(radio frequency plasma CVD thin films of diamond-like carbon/silica

nanocomposites using TEOS with optical properties)
IT 7631-86-9, Silica, properties
RL: PEP (Physical, engineering or chemical process); PRP (Properties);
PROC (Process)

(radio frequency plasma CVD thin films of diamond-like carbon/silica
nanocomposites using TEOS with optical properties)

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Berreman, D; Phys Rev 1963, V130, P2193 CAPLUS
- (2) Chapman, B; Glow Discharge Processes: Sputtering and Plasma Etching 1980, P143
- (3) Chin, B; Solid State Technol 1988, V31, P119 CAPLUS
- (4) Choi, W; Mater Res Soc Symp Proc 1997, V441, P671 CAPLUS
- (5) Cottrell, T; The Strengths of Chemical Bonds 1958, P160
- (6) Danielson, P; Vac Thin Film 1999, V2, P16
- (7) Deshmukh, S; Appl Phys Lett 1994, V65, P3185 CAPLUS
- (8) Dorfman, B; New Diamond & Diamond-Like Films 1995, P219 CAPLUS
- (9) Good, R; Surface & Colloid Science 1979, V11 CAPLUS
- (10) Jie, J; Proc SPIE 1991, V1519, P717
- (11) Kirov, K; Phys Status Solidi A 1979, V48, P609
- (12) Kulisch, W; Thin Solid Films 1989, V174, P57 CAPLUS
- (13) Lee, J; J Electrochem Soc 1996, V143, P1443 CAPLUS
- (14) Lee, K; Thin Solid Films 1997, V308-9, P263
- (15) Lisovskii, I; Thin Solid Films 1992, V213, P164 CAPLUS
- (16) Mukherjee, S; Thin Solid Films 1972, V14, P105 CAPLUS
- (17) Mutsura, N; Diamond Relat Mater 1995, V4, P342
- (18) Neerinck, D; Diamond Relat Mater 1998, V7, P468 CAPLUS
- (19) Neerinck, D; Thin Solid Films 1998, V317, P402 CAPLUS
- (20) Pan, X; Vacuum 1990, V41, P1360 CAPLUS
- (21) Ray, S; J Vac Sci Technol B 1992, V10, P1139 CAPLUS
- (22) Rong, Z; Appl Phys Lett 1994, V65, P1379 CAPLUS
- (23) Secrist, D; J Electrochem Soc 1966, V113, P920
- (24) Senkevich, J; unpublished
- (25) Sun, L; J Phys Colloq 1988, V49, P79
- (26) Wade, L; Organic Chemistry 1991, P663

RN 7782-40-3

RN 7440-44-0

RN 7440-37-1D

RN 78-10-4

RN 7782-44-7

RN 7631-86-9

L9 ANSWER 22 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2002:171482 CAPLUS

DN 136:218015

TI Heat-shielding transparent weather-resistant fluoropolymer films

IN Ariga, Hiroshi; Miyazawa, Hideaki; Kurooka, Yosuke

PA Asahi Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L027-12

ICS A01G009-14; A01G013-02; C08J005-18; C08K009-06; C08L027-18

CC 38-3 (Plastics Fabrication and Uses)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002069258	A2	20020308	JP 2000-256059	20000825
PRAI	JP 2000-256059		20000825		

AB The title films, useful for agriculture house, etc. (no data), are prepd.
from fluoropolymers (e.g., Aflon COP 88AX, hexafluoropropylene-

tetrafluoroethylene copolymer, tetrafluoroethylene-perfluoroalkyl vinyl ether copolymer, hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride copolymer) and 120-500 phr heat-shielding composite **particles** with diam. 95% within 0.1-30 .mu.m derived from metal oxides (e.g., Sb Sn oxide) surface treated with amorphous silica (e.g., derived from tetra-Et silicate) and optionally hydrophobilizing with org. Si compds. (e.g., ethyltriethoxysilane).

ST heat shielding transparent fluoropolymer film; agriculture house heat shielding fluoropolymer film; **hydrophobic** weather resistant heat shielding fluoropolymer **film**

IT Heat shields
Hydrophobicity
 Transparent films
 (heat-shielding transparent weather-resistant fluoropolymer **films**)

IT Fluoropolymers, uses
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (heat-shielding transparent weather-resistant fluoropolymer films)

IT Vinyl compounds, uses
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (perfluoroalkyl ether, polymer with tetrafluoroethylene; heat-shielding transparent weather-resistant fluoropolymer films)

IT Weathering
 (resistance to; heat-shielding transparent weather-resistant fluoropolymer films)

IT Oxides (inorganic), uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (surface treated with silica; heat-shielding transparent weather-resistant fluoropolymer films)

IT Perfluorocarbons
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (vinyl ether, polymer with tetrafluoroethylene; heat-shielding transparent weather-resistant fluoropolymer films)

IT 116-14-3D, Tetrafluoroethylene, polymer with perfluoroalkyl vinyl ether
 25067-11-2, Hexafluoropropylene-tetrafluoroethylene copolymer
 25190-89-0, Hexafluoropropylene-tetrafluoroethylene-vinylidene fluoride copolymer 68258-85-5, Aflon COP 88AX
 RL: POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (heat-shielding transparent weather-resistant fluoropolymer films)

IT 78-07-9, Ethyltriethoxysilane
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (hydrophobilization agents, silica-treated metal oxides treated with; heat-shielding transparent weather-resistant fluoropolymer films)

IT 7631-86-9, Silica, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (metal oxides treated with; heat-shielding transparent weather-resistant fluoropolymer films)

IT **78-10-4**, Tetraethyl silicate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (metal oxides treated with; heat-shielding transparent weather-resistant fluoropolymer films)

IT 12673-86-8, Antimony tin oxide
 RL: MOA (Modifier or additive use); USES (Uses)
 (surface treated with silica; heat-shielding transparent weather-resistant fluoropolymer films)

RN 116-14-3D
 RN 25067-11-2
 RN 25190-89-0

RN 68258-85-5
RN 78-07-9
RN 7631-86-9
RN 78-10-4
RN 12673-86-8

L9 ANSWER 23 OF 30 CAPLUS COPYRIGHT 2003 ACS
AN 2000:84329 CAPLUS
DN 132:115243
TI Heat-sensitive imaging material for lithographic plate preparation
IN Verschueren, Eric; Van Rompuy, Ludo; Vermeersch, Joan; Leenders, Luc
PA Agfa-Gevaert N.V., Belg.
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM B41C001-10
ICS B41M005-36
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other
Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 976549	A1	20000202	EP 1998-202576	19980731
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000079771	A2	20000321	JP 1999-215239	19990729
PRAI	EP 1998-202576		19980731		
AB	A heat-sensitive imaging material for lithog. plate prepn. without wet processing comprises on a lithog. plate support an image-forming layer comprising a hydrophilic binder, a crosslinking agent for the hydrophilic binder, metal oxide particles with a mean diam. of at least 100 nm, and dispersed hydrophobic thermoplastic polymer particles , characterized in that the image-forming layer has a ratio of sp. surface (in m ² /g) over mean roughness (in .mu.m) of more than 0.65 and that the mean pore width is less than 15 nm.				
ST	thermal imaging material crosslinkable hydrophilic binder lithog plate; hydrophobic polymer particle thermal imaging material lithog plate				
IT	Thermal printing materials (contg. crosslinkable hydrophilic binders and hydrophobic polymer particles for prepn. of lithog. plates)				
IT	Lithographic plates (thermal imaging materials contg. crosslinkable hydrophilic binders and hydrophobic polymer particles for prepn. of)				
IT	Recording materials (thermal; contg. crosslinkable hydrophilic binders and hydrophobic polymer particles for prepn. of lithog. plates)				
IT	9002-89-5, Polyviol WX RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses) (Polyviol WX; thermal imaging materials for lithog. plate prepn. contg.)				
IT	9003-53-6, Polystyrene RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses) (latexes; thermal imaging materials for lithog. plate prepn. contg.)				
IT	681-84-5D , Tetramethoxysilane, hydrolyzed 13463-67-7, Titanium dioxide, uses 72160-13-5, Akypo OP80 93480-00-3 255894-44-1 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses) (thermal imaging materials for lithog. plate prepn. contg.)				

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Agfa Gevaert Nv; EP 0770494 A 1997 CAPLUS

(2) Anon; "A LITHOGRAPHIC PRINTING PLATE" RESEARCH DISCLOSURE 1992, 333, P2

RN 9002-89-5

RN 9003-53-6

RN **681-84-5D**

RN 13463-67-7

RN 72160-13-5

RN 93480-00-3

RN 255894-44-1

L9 ANSWER 24 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2002:713053 CAPLUS

DN 138:15594

TI Preparation of organic-inorganic multifunctional nanocomposite coatings

AU Chen, Yun-fa; Wang, Rui-ming; Wu, Zhe-jiang; Xie, Yu-sheng

CS Institute of Process Engineering, Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China

SO Guocheng Gongcheng Xuebao (2002), 2(4), 375-379

CODEN: CJPEB5; ISSN: 1009-606X

PB Kexue Chubanshe

DT Journal

LA Chinese

CC 56-4 (Nonferrous Metals and Alloys)

Section cross-reference(s): 38, 57

gel AB Org.-inorg. multifunctional nanocomposite coatings are prep'd. on PMMA and Al substrates by the spinning technique with the concept of incorporating homogeneously nano-sized **particles** (AlOOH, SiC, ZrO₂ and ZnO) into mol. org.-inorg. hybrid matrixes. The hybrid matrixes are prep'd. from the controlled hydrolysis of Si-alkoxide precursors. The AlOOH **particles** are derived from Al isopropoxide and introduced into the hybrid sols directly, and SiC, ZrO₂ and ZnO are first surface-modified with Si-OH from hydrolyzed TEOS. By adjusting the compn. of the precursors, a series of **coatings** with scratch-resistant, corrosion protective, **hydrophobic**, **hydrophobic** and UV absorptive properties have been obtained.

ST nanocomposite coating spinning hydrolysis sol gel processing; aluminum hydroxide oxide zirconia nanoparticle coating; zinc oxide silicon carbide nanoparticle coating; tetraethyl orthosilicate glycidylpropyltriethoxysilane precursor coating

IT Coating materials

(abrasion- and scratch-resistant; org.-inorg. multifunctional nanocomposite coatings)

IT Nanoparticles

(coating contg.; prepn. of org.-inorg. multifunctional nanocomposite coatings)

IT Absorptivity

(for UV; of org.-inorg. multifunctional nanocomposite coatings)

IT Hydrolysis

Sol-gel processing

(in prepn. of org.-inorg. multifunctional nanocomposite coatings)

IT Hydrophilicity

Hydrophobicity

(of org.-inorg. multifunctional nanocomposite **coatings**)

IT Coating materials

Nanocomposites

(prepn. of org.-inorg. multifunctional nanocomposite coatings)

IT Corrosion

(resistance; of org.-inorg. multifunctional nanocomposite coatings)

IT 998-30-1, Triethoxysilane

RL: CPS (Chemical process); PEP (Physical, engineering or chemical

process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (glycidylpropyl, org. precursor; for prepn. of org.-inorg. multifunctional nanocomposite coatings)

IT 409-21-2, Silicon carbide (SiC), processes 1314-13-2, Zinc oxide (ZnO), processes 1314-23-4, Zirconium oxide (ZrO₂), processes 24623-77-6, Aluminum hydroxide oxide (Al(OH)O)
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (nanoparticle; for prepn. of org.-inorg. multifunctional nanocomposite coatings)

IT 78-10-4, Tetraethyl orthosilicate
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (org. precursor; for prepn. of org.-inorg. multifunctional nanocomposite coatings)

IT 7429-90-5, Aluminum, processes
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
 (substrate; for prepn. of org.-inorg. multifunctional nanocomposite coatings)

RN 998-30-1
 RN 409-21-2
 RN 1314-13-2
 RN 1314-23-4
 RN 24623-77-6
 RN 78-10-4
 RN 7429-90-5

L9 ANSWER 25 OF 30 CAPLUS COPYRIGHT 2003 ACS
 AN 1992:116925 CAPLUS
 DN 116:116925
 TI A lithographic printing plate
 AU Vermeersch, J.
 CS Agfa-Gevaert N. V., Neth.
 SO Research Disclosure (1992), 333, 2
 CODEN: RSDSBB; ISSN: 0374-4353
 DT Journal
 LA English
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Lithog. printing plate with excellent qualities is obtained from the material contg. on a support a hydrophilic **layer** contg. poly(vinyl alc.) hardened with tetraalkyl orthosilicate and **hydrophobic** thermoplastic polymer **particles**. Thus, a polyester support (contg. a hydrophilic adhesion layer) was coated with an aq. dispersion (pH = 6) contg. TiO₂, poly(vinyl alc.), hydrolized tetra-Me orthosilicate, and a wetting agent, dried (3 .mu.m dry thickness) and imagewise contact exposed to provide a printing plate which print several thousands of copies with high d. and without toning using a conventional fountain soln. and lithog. ink.

ST lithog printing plate polyvinyl alc
 IT Lithographic plates
 (with hydrophilic **layer** contg. tetraalkyl orthosilicate-hardened poly(vinyl alc.) and **hydrophobic** thermoplastic polymer **particles**)

IT 9002-88-4, Polyethylene
 RL: USES (Uses)
 (latex, lithog. printing plate material with hydrophilic **layer**

contg. tetraalkyl orthosilicate-hardened poly(vinyl alc.) and **hydrophobic** thermoplastic **particles** of)

IT 13463-67-7, Titanium dioxide, uses
 RL: USES (Uses)
 (lithog. printing plate material contg. hydrophilic layer based on tetraalkyl orthosilicate-hardened poly(vinyl alc.) and contg. polyethylene and **particles** of)

IT 9002-89-5, Poly(vinyl alcohol)
 RL: USES (Uses)
 (lithog. printing plate material with hydrophilic layer based on tetraalkyl orthosilicate-hardened)

IT **681-84-5D**, Tetramethyl orthosilicate, hydrolyzed
 RL: USES (Uses)
 (lithog. printing plate material with hydrophilic **layer** contg. **hydrophobic** thermoplastic polymer **particles** and poly(vinyl alc.) hardened with)

RN 9002-88-4
 RN 13463-67-7
 RN 9002-89-5
 RN **681-84-5D**

L9 ANSWER 26 OF 30 CAPLUS COPYRIGHT 2003 ACS
 AN 1989:444286 CAPLUS
 DN 111:44286
 TI Manufacture of ceramic building material with tortoiseshell-patterned surface
 IN Hisamatsu, Kunio; Hata, Minoru; Sugimoto, Hiroyuki; Osaki, Yoshiaki
 PA Nippon Chemical Industrial Co., Ltd., Japan; Kyohan Concrete K. K.; Shinagawa Refractories Co., Ltd.
 SO Jpn. Kokai Tokkyo Koho, 5 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C04B041-86
 ICS C04B041-68
 CC 57-4 (Ceramics)
 Section cross-reference(s): 58

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63291886	A2	19881129	JP 1987-127088	19870526
PRAI	JP 1987-127088		19870526		

AB Glass **powder** is melt-sprayed on substrates having thermal expansion coeff. smaller than that of the glass to form a tortoiseshell-patterned glaze layer and an inorg. pigment is rubbed into the layer to obtain the title material. The glaze **layer** can be treated with a **hydrophobic** material, e.g., a metal alkoxide or acetoacetate or a silicone oil. Thus, borosilicate glass **powder** was melt-sprayed on a sintered cordierite substrate to form a tortoiseshell-patterned glaze layer, a Cr oxide pigment was worked into the layer, and the surface was coated with Ti acetoacetate to obtain a material having yellow-colored tortoiseshell-patterned surface with good water resistance.

ST building ceramic material colored glazing; waterproofing glazed ceramic building material; borosilicate glass glazing building material; cordierite building material colored glazing

IT Grog
 (ceramic building materials contg., with tortoiseshell-patterned glazed surface)

IT Glazing
 (of ceramic building materials, by melt-spraying, for colored tortoiseshell-patterned surface)

IT Building materials
(ceramic, with colored tortoiseshell-patterned glazed surface)
IT 409-21-2, Silicon carbide (SiC), uses and miscellaneous 1302-88-1,
Cordierite 14940-68-2, Zircon
RL: USES (Uses)
(ceramic building materials, with colored tortoiseshell-patterned
glazed surface)
IT 78-10-4, Tetraethyl silicate 682-01-9 17501-79-0
RL: USES (Uses)
(coatings, hydrophobic, for ceramic building
materials with colored tortoiseshell-patterned glazed surface)
IT 11118-57-3, Chromium oxide (unspecified) 12227-89-3, C.I. Pigment Black
11 121685-66-3, M 470 121685-67-4, M 617 121685-75-4, NV 9112P
RL: USES (Uses)
(coloring with, of tortoiseshell-patterned glaze layers on ceramic
building materials)
IT 121685-01-6, B 300 (pigment) 121686-11-1, Z 580
RL: USES (Uses)
(coloring with, of tortoiseshell-patterned glazed building materials)
RN 409-21-2
RN 1302-88-1
RN 14940-68-2
RN 78-10-4
RN 682-01-9
RN 17501-79-0
RN 11118-57-3
RN 12227-89-3
RN 121685-66-3
RN 121685-67-4
RN 121685-75-4
RN 121685-01-6
RN 121686-11-1

L9 ANSWER 27 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2002:553074 CAPLUS

DN 137:113025

TI Preparation of transparent substrates comprising silicate glass or
polysiloxane inner layers by coating with alcohol solutions containing
molecules with fluorocarbon groups and chlorosilane groups for
crosslinking

IN Ogawa, Kazufumi; Soga, Mamoru

PA Matsushita Electric Industrial Co., Ltd., Japan

SO Eur. Pat. Appl., 47 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM B05D001-18

ICS C03C017-30; C08J007-04

CC 57-1 (Ceramics)

Section cross-reference(s): 38

FAN.CNT 8

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 1224983	A2	20020724	EP 2002-8972	19920121
	EP 1224983	A3	20021218		
	R: DE, FR, GB				
	JP 04239633	A2	19920827	JP 1991-24024	19910123
	JP 07009608	A2	19950113	JP 1991-24023	19910123
	JP 04249146	A2	19920904	JP 1991-36773	19910205
	JP 07086146	B4	19950920		
	JP 04288349	A2	19921013	JP 1991-36775	19910205
	JP 10310455	A2	19981124	JP 1998-80951	19910205

	JP 10309768	A2	19981124	JP 1998-80952	19910205
	JP 3165672	B2	20010514		
	JP 2001214156	A2	20010807	JP 2000-344205	19910205
	JP 04359031	A2	19921211	JP 1991-132737	19910604
	KR 9702941	B1	19970313	KR 1991-24106	19911224
	EP 629673	A2	19941221	EP 1994-114633	19920121
	EP 629673	A3	19950118		
	EP 629673	B1	20020502		
	R: DE, FR, GB				
	US 5407709	A	19950418	US 1993-148499	19931108
	JP 10146920	A2	19980602	JP 1997-295058	19971028
	JP 3017965	B2	20000313		
	JP 2000103007	A2	20000411	JP 1999-318905	19991109
	JP 3150133	B2	20010326		
PRAI	JP 1991-24023	A	19910123		
	JP 1991-24024	A	19910123		
	JP 1991-36773	A	19910205		
	JP 1991-36775	A	19910205		
	JP 1991-38133	A	19910206		
	JP 1991-132737	A	19910604		
	EP 1994-114633	A3	19920121		
	JP 1990-405754	A	19901225		
	JP 1990-405755	A	19901225		
	JP 1997-295058	A3	19910205		
	JP 1998-80952	A3	19910205		
	US 1991-812820	A3	19911224		
	EP 1992-100938	A3	19920121		
AB	Transparent substrates are coated to obtain at least one hydrophobic surface and at least one hydrophilic surface by including polysiloxane and silicate glass inner layers. The transparent substrates are prep'd. by coating with alc. soln. contg. mols. with fluorocarbon group and chlorosilane group for crosslinking. The transparent substrates may be used as windows or windshields.				
ST	transparent substrate silicate glass polysiloxane layer crosslinking agent; chlorosilane fluorocarbon group crosslinking agent transparent substrate prepn				
IT	Coating materials (hydrophobic ; prepn. of transparent substrates comprising silicate glass or polysiloxane inner layers by coating with alc. solns. contg. mols. with fluorocarbon groups and chlorosilane groups for crosslinking)				
IT	Polysiloxanes, processes Silicate glasses RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process) (inner layers; prepn. of transparent substrates comprising silicate glass or polysiloxane inner layers by coating with alc. solns. contg. mols. with fluorocarbon groups and chlorosilane groups for crosslinking)				
IT	Crosslinking agents Glass substrates Windows Windshields (prepn. of transparent substrates comprising silicate glass or polysiloxane inner layers by coating with alc. solns. contg. mols. with fluorocarbon groups and chlorosilane groups for crosslinking)				
IT	681-84-5 , Tetramethoxysilane 4109-96-0, Dichlorosilane 10025-78-2, Trichlorosilane 10026-04-7, Tetrachlorosilane 31323-44-1 51851-37-7 78560-44-8 78560-45-9 101947-16-4 142860-88-6 142860-89-7 RL: RCT (Reactant); RACT (Reactant or reagent) (crosslinking agents; prepn. of transparent substrates comprising				

silicate glass or polysiloxane inner layers by coating with alc. solns. contg. mols. with fluorocarbon groups and chlorosilane groups for crosslinking)

IT 56-23-5, Carbon tetrachloride, uses 67-66-3, Chloroform, uses 9002-89-5, PVA
 RL: NUU (Other use, unclassified); USES (Uses)
 (in films soln.; prepn. of transparent substrates comprising silicate glass or polysiloxane inner layers by coating with alc. solns. contg. mols. with fluorocarbon groups and chlorosilane groups for crosslinking)

IT 7631-86-9, Silica, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (**particles** in film soln.; prepn. of transparent substrates comprising silicate glass or polysiloxane inner layers by coating with alc. solns. contg. mols. with fluorocarbon groups and chlorosilane groups for crosslinking)

IT 544-76-3, Hexadecane
 RL: NUU (Other use, unclassified); USES (Uses)
 (solvent; prepn. of transparent substrates comprising silicate glass or polysiloxane inner layers by coating with alc. solns. contg. mols. with fluorocarbon groups and chlorosilane groups for crosslinking)

RN 681-84-5
 RN 4109-96-0
 RN 10025-78-2
 RN 10026-04-7
 RN 31323-44-1
 RN 51851-37-7
 RN 78560-44-8
 RN 78560-45-9
 RN 101947-16-4
 RN 142860-88-6
 RN 142860-89-7
 RN 56-23-5
 RN 67-66-3
 RN 9002-89-5
 RN 7631-86-9
 RN 544-76-3

L9 ANSWER 28 OF 30 CAPLUS COPYRIGHT 2003 ACS
 AN 2002:367184 CAPLUS
 DN 136:375354
 TI Method for making surfactant-templated thin films
 IN Brinker, C. Jeffrey; Lu, Yunfeng; Fan, Hongyou
 PA Sandia Corporation, USA
 SO U.S., 14 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 IC ICM B05D003-02
 ICS B05D003-10; B05D001-02; B05D003-12; B05D001-18
 NCL 427387000
 CC 66-6 (Surface Chemistry and Colloids)
 Section cross-reference(s): 73, 77

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6387453	B1	20020514	US 2000-517873	20000302
PRAI	US 2000-517873		20000302		

AB Disclosed is an evapn.-induced self-assembly method to prep. a porous, surfactant-templated, thin film by mixing a SiO₂ sol, a solvent, a surfactant, and an interstitial compd., evapg. a portion of the solvent to form a liq., cryst. thin film mesophase material, and then removal of the

surfactant template. Coating onto a substrate produces a thin film with the interstitial compd. either covalently bonded to the internal surfaces of the ordered or disordered mesostructure framework or phys. entrapped within the ordered or disordered mesostructured framework.

Particles can be formed by aerosol processing or spray drying rather than coating onto a substrate. The selection of the interstitial compd. provides a means for developing thin films for applications including membranes, sensors, low dielec. const. films, photonic materials and optical hosts.

ST surfactant templated silica film prepn self assembly

IT Aerosols

(aerosol processing; prepn. method of surfactant-templated thin film including step of evapg. portion of solvent by)

IT Silanes

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(alkoxy, interstitial compd.; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT Quaternary ammonium compounds, uses

RL: NUU (Other use, unclassified); USES (Uses)
(alkyl, surfactants; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT Polymers, uses

RL: NUU (Other use, unclassified); USES (Uses)
(block, surfactants; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT Coating process

(dip; prepn. method of surfactant-templated thin film including steps of evapg. portion of solvent and coating silica sol onto substrate by)

IT Magnetic films

Self-assembly

Surfactants

(evapn.-induced self-assembly method to prep. porous surfactant-templated thin film)

IT Surfactants

(gemini; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT **Films**

(hybrid **films** and **hydrophobic films**;
evapn.-induced self-assembly method to prep. porous surfactant-templated thin film)

IT Dyes

(interstitial compd.; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT Oligomers

Polymers, processes

Proteins

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(interstitial compd.; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT Optical films

(nonlinear; evapn.-induced self-assembly method to prep. porous surfactant-templated thin film)

IT Amines, uses

RL: NUU (Other use, unclassified); USES (Uses)
(primary, surfactants; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT Sulfonic acids, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (salts, surfactants; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT Alcohols, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (solvent; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT Coating process
 (spin; prepn. method of surfactant-templated thin film including steps of evapg. portion of solvent and coating silica sol onto substrate by)

IT Coating process
 (spray; prepn. method of surfactant-templated thin film including steps of evapg. portion of solvent and coating silica sol onto substrate by)

IT Carboxylic acids, uses
 Phosphates, uses
 Polyoxyalkylenes, uses
 Polyoxyalkylenes, uses
 Sulfates, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (surfactants; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT 7664-41-7, Ammonia, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (condensation promoter; evapn.-induced self-assembly method to prep. porous surfactant-templated thin film)

IT 7631-86-9P, Silica, preparation
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (film; evapn.-induced self-assembly method to prep. porous surfactant-templated thin film)

IT 4420-74-0 7761-88-8, Silver nitrate, processes 16415-12-6, Hexadecyltrimethoxysilane 51851-37-7, Tridecafluoro-1,1,2,2-tetrahydrooctyltriethoxysilane 71783-41-0, 3-(2,4-Dinitrophenylamino)propyl(triethoxy)silane
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (interstitial compd.; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT 81-88-9, Rhodamine B 9007-43-6, Cytochrome c, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (interstitial compd.; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT 7440-22-4P, Silver, preparation
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (nanowire; prepn. method of silver nanowire using surfactant-templated thin film)

IT 78-10-4, Tetraethylorthosilicate 546-68-9, Titanium isopropoxide 555-31-7, Aluminum isopropoxide 1071-76-7 5593-70-4
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (precursor sol; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT 64-17-5, Ethanol, uses 75-12-7, Formamide, uses 109-99-9, Tetrahydrofuran, uses
 RL: NUU (Other use, unclassified); USES (Uses)

(solvent; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

IT 7440-21-3, Silicon, uses

RL: NUU (Other use, unclassified); USES (Uses)

(substrate; prepn. method of surfactant-templated thin film including steps of evapg. portion of solvent and coating silica sol onto substrate)

IT 57-09-0, Ctab 5698-39-5, Octaethylene glycol monohexadecyl ether
7016-47-9, Copper dodecyl sulfate 24233-81-6, Octaethylene glycol
monodecyl ether 25322-68-3 58524-67-7, Sulfuric acid, monododecyl
ester, iron(2+) salt 122706-98-3D, salts

RL: NUU (Other use, unclassified); USES (Uses)

(surfactants; prepn. method of surfactant-templated thin film including step of mixing precursor sol, solvent, surfactant, and interstitial compd.)

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Antonucci; US 6177534 B1 2001 CAPLUS
- (2) Brinker; US 5858457 A 1999 CAPLUS
- (3) Burkett, S; Chem Commun 1996, V11, P1367
- (4) Feng, X; Science 1997, V276, P923 CAPLUS
- (5) Fowler; CHEM COMMUN 1997, P1769 CAPLUS
- (6) Fowler, C; Chem Commun 1997, P1769 CAPLUS
- (7) Lim, M; J Am Chem Soc 1997, V119, P4090 CAPLUS
- (8) Moroi, Y; Journal of Colloid and Interface Science 1974, V46(1), P111 CAPLUS
- (9) Roth; US 5595715 A 1997 CAPLUS
- (10) Sellinger; NATURE 1998, V394, P256 CAPLUS
- (11) Sellinger, A; Nature 1998, V394, P256 CAPLUS

RN 7664-41-7
RN 7631-86-9P
RN 4420-74-0
RN 7761-88-8
RN 16415-12-6
RN 51851-37-7
RN 71783-41-0
RN 81-88-9
RN 9007-43-6
RN 7440-22-4P
RN **78-10-4**
RN 546-68-9
RN 555-31-7
RN 1071-76-7
RN 5593-70-4
RN 64-17-5
RN 75-12-7
RN 109-99-9
RN 7440-21-3
RN 57-09-0
RN 5698-39-5
RN 7016-47-9
RN 24233-81-6
RN 25322-68-3
RN 58524-67-7
RN 122706-98-3D

L9 ANSWER 29 OF 30 CAPLUS COPYRIGHT 2003 ACS

AN 2001:760370 CAPLUS

DN 135:325270

TI Lithographic master plates for direct platemaking by heat-mode laser exposure

gel

IN Yamazaki, Sumiaki; Kawamura, Koichi
 PA Fuji Photo Film Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 26 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM G03F007-00
 ICS B41N001-14; G03F007-004
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001290263	A2	20011019	JP 2000-108062	20000410
PRAI	JP 2000-108062		20000410		
AB	The masters possess light-heat-converting layers contg. hydrophilic polymers that become hydrophobic upon heating and particulate metal oxides that include org. light-heat-converting substances. The masters exhibit good durability of printing face and provide stain-free images.				
ST	lithog master heat mode laser platemaking; thermally sensitive hydrophilic polymer lithog master; IR dye including silica lithog master				
IT	Silica gel, preparation RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (IR dye-including, light-heat-converting layers; lithog. masters for direct platemaking by heat-mode laser exposure)				
IT	Dyes (IR-absorbing, light-heat-converting layers; lithog. masters for direct platemaking by heat-mode laser exposure)				
IT	Laser radiation (heat-mode; lithog. masters for direct platemaking by heat-mode laser exposure)				
IT	Oxides (inorganic), uses RL: TEM (Technical or engineered material use); USES (Uses) (light-heat-converting layers; lithog. masters for direct platemaking by heat-mode laser exposure)				
IT	Lithographic plates (masters; lithog. masters for direct platemaking by heat-mode laser exposure)				
IT	78-10-4 , Tetraethoxysilane RL: RCT (Reactant); RACT (Reactant or reagent) (in prepn. of IR-dye-contg. silica gels for light-heat-converting layers of lithog. masters)				
IT	265316-42-5	289893-03-4	326794-60-9	367261-81-2	367264-67-3
	367274-16-6				
	RL: TEM (Technical or engineered material use); USES (Uses) (light-heat-converting layers; lithog. masters for direct platemaking by heat-mode laser exposure)				
RN	78-10-4				
RN	265316-42-5				
RN	289893-03-4				
RN	326794-60-9				
RN	367261-81-2				
RN	367264-67-3				
RN	367274-16-6				
L9	ANSWER 30 OF 30 CAPLUS COPYRIGHT 2003 ACS				
AN	2001:10636 CAPLUS				
DN	134:78685				
TI	Heat-sensitive imaging element with cover layer for providing a				

lithographic printing plate
 IN Vermeersch, Joan; Van Damme, Marc
 PA Agfa-Gevaert N.V., Belg.
 SO Eur. Pat. Appl., 9 pp.
 CODEN: EPXXDW
 DT Patent
 LA English
 IC ICM B41C001-10
 ICS B41M005-36
 CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1065049	A1	20010103	EP 2000-201854	20000524
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6503684	B1	20030107	US 2000-584490	20000601
	JP 2001039047	A2	20010213	JP 2000-192384	20000627
PRAI	EP 1999-202108	A	19990629		
	US 1999-143664P	P	19990714		
AB	The invention relates to heat-sensitive material for prepg. lithog. plates. The invention provides a heat-sensitive material for making lithog. printing plates comprising on a lithog. support an image-forming layer comprising a hydrophilic binder a crosslinking agent for a hydrophilic binder and dispersed hydrophobic thermoplastic polymer particles , characterized in that the said image-forming layer is covered with a layer comprising at least one org. compd. comprising cationic groups.				
ST	heat imaging lithog printing plate				
IT	Heat-sensitive materials Lithographic plates Thermal printing materials (heat-sensitive imaging element with cover layer for providing lithog. printing plate coated with IR-sensitive layer contg.)				
IT	Plastics, uses RL: NUU (Other use, unclassified); USES (Uses) (thermoplastics; heat-sensitive imaging element with cover layer for providing lithog. printing plate coated with IR-sensitive layer contg.)				
IT	9003-53-6, Polystyrene 251640-76-3 RL: DEV (Device component use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses) (heat-sensitive imaging element with cover layer for providing lithog. printing plate coated with IR-sensitive layer contg.)				
IT	7429-90-5, Aluminum, uses RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses) (heat-sensitive imaging element with cover layer for providing lithog. printing plate on aluminum substrate)				
IT	13463-67-7, Titanium oxide, uses RL: DEV (Device component use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses) (heat-sensitive imaging element with cover layer for providing lithog. printing plate on aluminum substrate)				
IT	681-84-5, Tetramethyl orthosilicate RL: DEV (Device component use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses) (hydrolyzed; heat-sensitive imaging element with cover layer for providing lithog. printing plate on aluminum substrate)				

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Agfa Gevaert Nv; EP 0514990 A 1992 CAPLUS
- (2) Agfa Gevaert Nv; EP 0816070 A 1998 CAPLUS

(3) Agfa Gevaert Nv; EP 0849090 A 1998 CAPLUS
(4) Agfa Gevaert Nv; GB 2325055 A 1998 CAPLUS
(5) Minnesota Mining & Mfg; EP 0703499 A 1996 CAPLUS
(6) Uytterhoeven Herman Jozef; WO 9416904 A 1994 CAPLUS
RN 9003-53-6
RN 251640-76-3
RN 7429-90-5
RN 13463-67-7
RN **681-84-5**

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